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CULTURAL LANDSCAPE REPORT FOR FLOYD BENNETT FIELD

GATEWAY NATIONAL RECREATION AREA

SITE HISTORY, EXISTING CONDITIONS, ANALYSIS AND EVALUATION



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CULTURAL LANDSCAPE REPORT FOR FLOYD BENNETT FIELD

GATEWAY NATIONAL RECREATION AREA

BROOKLYN, NEW YORK

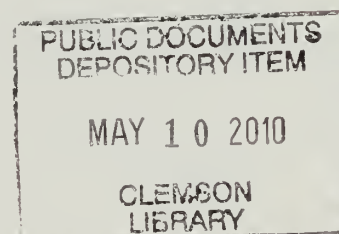
SITE HISTORY

EXISTING CONDITIONS

ANALYSIS AND EVALUATION

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Olmsted Center for Landscape Preservation
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Cover Image: Aerial view looking north over Hangar Row and Flatbush Avenue, c.1937. (Photograph 19008, Gateway National Recreation Area Museum Collection.)

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INTRODUCTION

On the approach to busy John F. Kennedy International Airport (JFK) in New York City, travelers fly over another airport on the opposite side of Jamaica Bay (fig. 0.1). This airport is Floyd Bennett Field, the predecessor to JFK that was dedicated in 1931 as the city's first municipal airport. Considered one of the finest airports in the world during the 1930s, Floyd Bennett Field was the site of numerous record-breaking flights and home to private aircraft operators as well as the U. S. Navy and Coast Guard, which built their own facilities at the field. Never a commercial success, the Navy ultimately took over the entire field in 1941 and expanded it into Naval Air Station New York, which served a major role in the World War II home front. Following three decades of decreasing military activity, the Navy transferred most of Floyd Bennett Field to the National Park Service in 1972 as a part of Gateway National Recreation Area. Closed to civilian aviation for more than sixty years and to military aviation for more than thirty years, Floyd Bennett Field today still reflects its origins as one of the country's first-generation municipal airports and a World War II naval air station as evident in its Art Deco hangars and neoclassical terminal building lining Flatbush Avenue, runways, Moderne-style Coast Guard hangar, seaplane ramps, and numerous war-time buildings.

Figure 0.1: View east across Floyd Bennett Field upon approach to its successor, John F. Kennedy International Airport, partially visible at the upper left corner, 2007. (Photo courtesy of David Washburn, SUNY ESF.)



Although most major features remain, the landscape of Floyd Bennett Field has changed over the past thirty years of civilian administration as management shifted from military and aviation uses to recreation and natural resource conservation. Faced with more infrastructure than it could use or maintain, the park demolished buildings while adding new roads, parking lots, and minor buildings for park operations. Runways and taxiways have been obscured, and successional woods have grown up within the airfield. While not managed as a historic site, the park has worked over the years to enhance features from the original municipal airport, which was listed in the National Register of Historic Places in 1980. The development by the Coast Guard and subsequent military development during World War II, however, have only recently been recognized as having historic significance.

Today, Floyd Bennett Field is the largest expanse of open land in New York City, totaling approximately 1,300 acres. Located at the southeastern extent of Brooklyn at the end of Flatbush Avenue, nearly one million people visit the field annually for its range of recreational facilities and natural habitat that overlay the earlier aviation and military landscape. Many of the more than sixty existing buildings on the field are leased to governmental agencies, concessionaires, and not-for-profit organizations, while a large number stand vacant.

The information in this Cultural Landscape Report will provide the documentation necessary to make informed decisions about both the short- and long-term management of the Floyd Bennett Field landscape. This will aid the park in its ongoing efforts to adaptively reuse the enormous infrastructure of the field and to appropriately balance cultural and natural resource management.

PROJECT SCOPE, ORGANIZATION, AND METHODS

In the National Park Service, a Cultural Landscape Report is the principle treatment document for cultural landscapes and the primary tool for their long-term management. The park service defines a cultural landscape as a geographic area that includes both built and natural resources, and is associated with a historic event, activity, or person.¹ A cultural landscape includes not only topography, circulation, and vegetation features, but also buildings and small-scale features such as light standards and fences. This report employs a landscape approach to research that provides comprehensive documentation of a property's physical development and its associated historic contexts. This landscape approach addresses a breadth of cultural and natural resource types, and establishes relationships among history, architecture, landscape architecture, planning, and archeology, among other disciplines.²

In accordance with the project agreement, the scope of this report includes a site history, existing conditions, and analysis and evaluation (Cultural Landscape Report Part I) in support of five main objectives. The first is to document the physical evolution of the municipal and military landscape. Second, the report provides contextual documentation on the history of American airfield landscapes, both civilian and military, sufficient to evaluate the historical significance of the Floyd Bennett Field landscape. The third objective is to evaluate the changing historical appearance of the landscape's characteristics and associated features to inform management decisions regarding the nature and appropriateness of proposed repair and replacement efforts. Fourth, the report provides documentation supporting park consultation responsibilities under Section 106 of the National Historic Preservation Act, including the evaluation of the landscape outside the existing National Register historic district. The fifth objective is to recommend preliminary treatment strategies for the long-term management of the cultural landscape, as well as short-term recommendations particularly to address a proposed project to replace eight miles of primary electrical cables on the field and construct new entrances off Flatbush Avenue. The report does not include a full treatment plan (Cultural Landscape Report Part II).

This report has been developed according to the methods in *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (National Park Service, 1998). The first chapter, Site History, provides a narrative on the complex physical history of Floyd Bennett Field from pre-settlement through the present. The chapter is broken down into five periods, each representing a distinct time defined by changes in land use, development, and ownership. The subsequent chapters have been developed in a more technical style to meet park management needs. Chapter 2, Existing Conditions, provides an overview of the present character of the landscape and its administration and use, organized by landscape character areas. Chapter 3, Analysis and Evaluation, assesses the historic significance and integrity of the landscape based on the National Register Criteria, and evaluates the historic character of the landscape according to National Park Service cultural landscape methodology. The fourth chapter provides preliminary treatment recommendations that would be refined and expanded in completion of a full treatment plan (Cultural Landscape Report Part II). These recommendations identify current landscape treatment issues and propose preliminary tasks based on the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and the overall objective of enhancing the historic character of the landscape.

Research for this report has been undertaken at a thorough level of investigation, involving primary holdings at the Gateway National Recreation Area archives at Fort Wadsworth, Staten Island, and at the National Archives in Washington,

D.C. and College Park, Maryland.³ Primary and secondary sources such as photographs, aerial images, written descriptions, land use plans, and existing management documents were examined to gain information regarding the physical development of Floyd Bennett Field as well as its significance in aviation and military history. Research included examining all available documentation dating from early settlement of the local area through present-day. Interviews and consultation with park staff and architectural historians helped inform the understanding of the landscape's evolution. Research into primary-source textual materials in New York City archives and at the National Archives was not undertaken for this project.

This report includes graphic plans that document and evaluate the cultural landscape. These include period plans in the site history that illustrate change in the landscape during each period; an existing conditions plan (2008) that graphically depicts the landscape as it presently exists; and an analysis and evaluation plan that locates landscape features and contrasts those that existed during the period of significance with those that were added afterward. These plans were developed from a combination of historic maps, field inventory, and historic photographs.

PROJECT SETTING

Floyd Bennett Field is located on the western end of Long Island at the southeast corner of the New York City borough of Brooklyn (Kings County) (fig. 0.2).

Manhattan is approximately twenty miles to the northwest. Floyd Bennett Field, built on fill within a tidal estuary, is bounded by water on all sides except to the west along Flatbush Avenue (fig. 0.3). The field is located along the western shore of Jamaica Bay, which retains a number of undeveloped islands. The Atlantic

Ocean is approximately a half mile to the south across the Rockaway Peninsula, part of the system of barrier beaches along the south shore of Long Island.

While Floyd Bennett Field is geographically isolated from residential areas, the surrounding region is densely developed. To the north and west in Brooklyn are the neighborhoods of Flatlands, Sheepshead Bay, and Manhattan Beach, and to the south on Rockaway Peninsula in Queens are Nesponsit and Breezy Point. Shore Parkway, also known as the Belt Parkway, was completed in 1940 and is the only limited access highway through

Figure 0.2: Floyd Bennett Field showing regional location relative to the five boroughs of New York City and the surrounding region. (SUNY ESF)





Figure 0.3 (top): Recent aerial photograph of Floyd Bennett Field illustrating setting of surrounding communities and natural features. The red line indicates the cultural landscape report project area boundary. (Detail, USGS Brooklyn aerial photograph, 1994, annotated by SUNY ESF.)



Figure 0.4 (bottom): Map of Gateway National Recreation Area showing context of Floyd Bennett Field to adjoining park units. (National Park Service, "The National Parks of New York Harbor Regional Map," 2004.)

the area. The major commercial arterial is Flatbush Avenue, an early road that extends southeast from the Manhattan Bridge and downtown Brooklyn. It was extended to Rockaway Inlet in 1923, and was completed to Rockaway Peninsula across the Marine Parkway Bridge (recently renamed the Gil Hodges Memorial Bridge) in 1937.

Floyd Bennett Field is situated within a concentration of parks and natural areas, most of which are part of Jamaica Bay Unit of Gateway National Recreation Area, part of the National Park System established in 1972 from city parks and military bases (fig. 0.4). These include Jacob Riis Park, formerly a city park built in the 1930s; Fort Tilden, a former Army installation developed during World Wars I and II; Breezy Point, a natural area on the Rockaway Peninsula; the Jamaica Bay Wildlife Refuge that encompasses most of the islands within Jamaica Bay; and Plumb Beach west of the Gerritsen Inlet.

Brooklyn Marine Park, at the head of Gerritsen Inlet, is a New York City park developed in the 1930s that extends along the west side of Flatbush Avenue, north of Shore Parkway.

PROJECT AREA

The National Park Service administers most of the federally owned property historically associated with Floyd Bennett Field. This property encompasses all land east of Flatbush Avenue and south of the Shore Parkway, except for approximately 100 acres under the jurisdiction of the Department of Defense and used as a Marine Corps Reserve Center, and a two-acre parcel administered by the U. S. Department of Transportation, Federal Aviation Administration as a Doppler



Figure 0.5: Current aerial photograph of Floyd Bennett Field illustrating immediate setting, project area boundary, and areas of the landscape. (Detail, USGS aerial photograph c.2006, accessed from Microsoft Live Search website, annotated by SUNY ESF.)

radar facility (fig. 0.5). For the purposes of this Cultural Landscape Report, the project area includes only the property historically associated with Floyd Bennett Field and Coast Guard Air Station Brooklyn, which was later transferred to the National Park Service in 1998. This is the landscape under National Park Service management, and includes within it the 329-acre National Register historic district that generally corresponds with the boundary of the original municipal airport. The land west of Flatbush Avenue bordering Dead Horse Bay and Gerritsen Inlet, including Gateway Marina, is administered as part of Floyd Bennett Field but is excluded from the project area because it was historically part of Brooklyn Marine Park.

While this report focuses on the project area, it also addresses areas outside of it. The Site History chapter includes the Marine Corps Reserve Center and Doppler radar facility, since both properties were originally part of Floyd Bennett Field. The site history also documents, in lesser detail, the development of the surrounding landscape context, notably Flatbush Avenue and Shore Parkway. The project area more strictly defines the content of the Existing Conditions,

Analysis & Evaluation, and preliminary treatment recommendations since these chapters address landscape subject to National Park Service management. Within the project area, the Analysis & Evaluation focuses on the National Register-listed Floyd Bennett Field Historic District. Areas not under the jurisdiction of the National Park Service, such as Flatbush Avenue, are addressed in the Existing Conditions and Analysis & Evaluation chapters only to the extent that they influence the treatment of the landscape within the project area.

SUMMARY OF FINDINGS

SITE HISTORY

Tidal Estuary and Early Development, Pre-History–1928

Prior to development, the site of Floyd Bennett Field was comprised of numerous small islands, creeks, bays, and channels that were part of the tidal estuary of Jamaica Bay. Barren Island, located on the south side of the site and the only upland within this part of the estuary, was formed as part of the system of barrier beaches along the south shore of Long Island. Barren Island was naturally low dunes and sandy beach, surrounded by the wide, open expanses of the Atlantic Ocean to the south, Jamaica Bay to the north, and the low-lying south shore of Long Island in the distance. Salt grasses covered the marshes while trees and shrubs grew on the dunes and uplands. By the nineteenth century, Barren Island was transformed into an interior island within Jamaica Bay due to storms and longshore currents, which extended Rockaway Beach, the barrier beach to the east, westward beyond Barren Island.

The cultural history of Floyd Bennett Field extends back well before the arrival of Europeans. At the time of European contact in the seventeenth century, the site was part of the homeland of the Canarsie people, who named Barren Island, “Equendito.” There is no evidence of Native American habitation on Barren Island, but the island probably served as fishing and hunting grounds.

European settlement reached the Canarsie homeland in southern Brooklyn by 1626, but remained distant from the project area for many years. Initially used for grazing and harvesting salt hay and sand, it was not until about 1800 that the first structures were built on the island, a hotel that catered to fishermen. Between 1850 and 1918, Barren Island was transformed into an industrial community built off the processing of dead animals and garbage from New York and Brooklyn. These industries were lured to Barren Island on account of its remote location, where offensive odors would not reach populated areas, and its access to deep

navigable waters in Rockaway Inlet. The factories made use of the wetlands and bays at the north or inland side of Barren Island for dumping their refuse. A small community developed around the industries, with residences, churches, bars, and a school. At the height of the industrial development in the second decade of the twentieth century, the population of Barren Island reached approximately 1,500 people. In 1923, the island's isolation from the mainland was ended with the construction of Flatbush Avenue, which extended to the Rockaway Inlet shoreline of Barren Island. By the late 1920s as public pressure mounted against the waste factories, the population declined to 400 with only one of the factories remaining in business.

Municipal Airport Period, 1928–1941

During the 1920s as the garbage industry on Barren Island was disappearing, commercial aviation was gaining popularity and municipalities throughout the country were constructing airports. In 1927, city officials chose Barren Island, site of the private Barren Island Airport, and the tidal flats to its north as the location of the city's first municipal airport, named after the noted Navy aviator, Floyd Bennett. New York City officials chose this location for its access to water for seaplanes and because the city already had jurisdiction over the site and had been filling and dredging the area as part of unrealized plans for major port development. Construction of the airport began in 1928 with filling that raised the elevation to sixteen feet above mean tide levels, construction of two concrete runways, and building of hangars and a terminal building lining the west side of Flatbush Avenue. The city officially dedicated the airport on May 23, 1931, and it became a favorite location for record-breaking flights, and home to private aircraft companies, the Navy, and the Coast Guard.

In the years after the dedication, the city made numerous improvements to the field, including beginnings of a seaplane base along Jamaica Bay and the addition of nighttime navigation lighting, two new runways, and maintenance buildings. Many of these improvements were undertaken through the federal Works Progress Administration (WPA). In 1936, the U. S. Coast Guard built its own hangar and seaplane ramp along the Jamaica Bay shoreline on land leased from the city, adjoining the city's seaplane base. In 1940 following the declaration of a national emergency, the Navy began to develop its own facilities on land leased from the city. These included a reserve base along Flatbush Avenue and a separate Aviation Patrol Base north of the Coast Guard station with a hangar, seaplane ramp, and two barracks.

Although Floyd Bennett Field was busy with private aircraft and Coast Guard and Navy operations, it never became a commercial success for the city, owing in large part to its remote location and failure to secure the Post Office's exclusive airmail

contract, which had been awarded to Newark (New Jersey) Airport. For only a brief period in 1937-1938 did a commercial airline operate regular service from Floyd Bennett Field.

To the south of the airport, the Barren Island community was slowly disappearing during this period. The city cleared the western part of the island in the mid-1930s for redevelopment as part of Brooklyn Marine Park, to be linked by other parks in the area by the Marine Parkway Bridge completed across Rockaway Inlet in 1937. The eastern end of the island remained in private ownership with its houses, church, and foundations of demolished factories. To the north of the airport, the city continued its filling operations, but remnants of the tidal estuary remained.

World War II Period, 1941–1945

As U.S. involvement in the war appeared imminent in early 1941, the Navy required a Naval Air Station in the New York City area and decided to locate the new facility at Floyd Bennett Field, where the Navy had already developed numerous facilities on land leased from the city. While the city was reluctant to give up the airport despite its lack of commercial success, it did agree to a long-term lease. On May 26, 1941, the city closed Municipal Airport #1, Floyd Bennett Field. The Navy quickly took over the airport and one week later on June 2, 1941, it commissioned Naval Air Station (NAS), New York. With U. S. entry into the war following Pearl Harbor on December 7, 1941, the Navy pressed the city for purchase of the airport and surrounding city-owned land to the north and south in order to redevelop and expand NAS New York. The Navy condemned the remaining private property on Barren Island by January 1942 and on February 9, 1942, took ownership of the city property through condemnation.

Immediately following acquisition of the property, the Navy began its extensive redevelopment and expansion. Within the original airport property, the Navy extended the runways, built a circumferential taxiway system, constructed a maintenance complex on the east side of the airfield, and expanded Hangar Row and the Aviation Patrol Base with new hangars and support buildings. In the tidal estuary to the north of the airport, the Navy filled the area to expand the airfield and build a new runway, and constructed a communications-ammunitions complex with radio towers and high-explosive magazines. The most substantial change occurred on Barren Island, where the Navy demolished all remnants of the community and expanded the land out into Rockaway Inlet and Jamaica Bay to build two barracks areas, a seaplane base, and a wharf. In total, the Navy expanded Floyd Bennett Field from 387 acres to more than 1,280 acres, and constructed three new hangars and approximately 100 other buildings. Despite the extensive redevelopment, the Navy retained much of the original municipal

infrastructure of Floyd Bennett Field and the open, expansive character of the landscape.

Cold War Period, 1945-1972

While Floyd Bennett Field played a vital function in the World War II home front, its military role in the decades after the war rose and fell with the vagaries of the Cold War. In the immediate post-war years, military activity at NAS New York dropped significantly as the Navy reduced its war-time arsenal at bases across the country. The Navy was faced with much more infrastructure than it needed, and so removed a number of frame barracks and began to lease out portions of the field to other public agencies as the city had done prior to the war, notably the New York Air National Guard and the New York City Police Aviation Unit. Beginning in 1950 with the Korean War, the Navy invested in a program of improvements including lengthening of runways and construction of a new barracks complex. Change continued through the 1960s with additional demolitions and some new construction, notably a nose hangar constructed by the Air National Guard in Hangar Row. By the closing years of the Vietnam War in the early 1970s, the Navy had little use for NAS New York and in June 1971 it was decommissioned as part of a plan for its transformation into a public recreation area. A year prior to this time, the Navy established Naval Air Reserve Detachment (NARDET) at the Aviation Patrol Base and would retain ownership of this small part of the field. It retained ownership of the rest of the field until late 1972 while plans were finalized for its post-military future. These plans included transferring the bulk of the property to the National Park Service, except for approximately 100 acres along Rockaway Inlet that the Department of Defense retained as a reserve base. The Coast Guard retained ownership of its air station along Jamaica Bay, and incorporated additional property including a part of the maintenance area and a runway.

National Park Service Period, 1972-Present

Numerous alternatives were circulated for the future of Floyd Bennett Field following its decommissioning, notably a large-scale housing development for 180,000 people, but the site was ultimately included in federal legislation passed in October 1972 establishing Gateway National Recreation Area. Gateway included over 26,000 acres of former military bases and city parks in New York and New Jersey. Floyd Bennett Field encompassed approximately 1,450 of the total acreage and included most of the former naval air station as well as parts of Brooklyn Marine Park. The new park opened to the public in 1974. The size of Floyd Bennett Field was increased upon incorporation of the Navy's NARDET base,

which was decommissioned in 1983, and the Coast Guard's air station, which was decommissioned in 1996.

Over the three decades following establishment of Gateway, the landscape of Floyd Bennett Field changed considerably as management shifted toward recreation and natural resource conservation and as limited budgets curtailed maintenance of the sprawling former military base. Conspicuous changes to the landscape during the National Park Service period include growth of woods and planting of trees on formerly open airfield; demolition of buildings, notably three World War II-period hangars as well as several barracks; and conversion of runways and aprons for roads and parking lots. Other changes relate to conversion from military to recreational uses. With much more infrastructure than it can use, the park has turned to partners and concessionaires for use of the field. These outside users have built community gardens, outdoor playing fields, and a connector building between two hangars as part of a large indoor recreation center.

EXISTING CONDITIONS

Floyd Bennett Field is today an expansive landscape characterized by open fields, extensive areas of concrete and asphalt pavement, young second-growth woods and thickets, engineered and natural shorelines, and a variety of buildings clustered into what were historically flight-path clear zones. Although no longer used for military or aviation purposes (except for city police helicopters), the landscape still reflects its origins as New York City's first municipal airport and as a major naval aviation base in the World War II home front. The Floyd Bennett Field park site consists of most of the former Naval Air Station, New York property and the much smaller U. S. Coast Guard Air Station property.

The National Park Service manages Floyd Bennett Field primarily for recreation and natural resource conservation, although the park maintains other uses through leases and partnerships. The park offers the public a number of recreational opportunities at Floyd Bennett Field, including environmental programs, youth camping, nature trails, a model airplane flying field, sports fields, a remote-control car track, and an archery range. The largest recreation concession is Aviator Sports that occupies the north half of Hangar Row. Other park partners include the Floyd Bennett Garden Association, a cricket club, the Historic Aircraft Restoration Project (H.A.R.P.), the New York City Board of Education (Gateway Environmental Education Center), and Polytechnic University, part of New York University.

In addition to partners and concessions, the National Park Service also maintains special use permits with two city agencies for exclusive, non-public use of portions of Floyd Bennett Field, including the New York City Police Department, which occupies the former U. S. Coast Guard Air Station Brooklyn property. Within the police's special use area is a 1.8-acre parcel used by the Federal Aviation Administration for a Doppler radar tower. North of the city police, the park maintains a special use permit with the New York City Department of Sanitation to provide vehicle training for sanitation workers.

ANALYSIS AND EVALUATION

The site history and existing conditions documented in this report reveal that the cultural landscape of Floyd Bennett Field has a layered character that illustrates its development over the course of the past seventy-five years since its dedication in 1931. While the earlier landscapes of tidal estuaries and the community on Barren Island that existed in part prior to 1941 are no longer visible, the original municipal airport and its World War II expansion continue to characterize the landscape today. The post-1945 naval development did not alter the overall character of the landscape, although it did change some of its details, particularly in the South Administrative Area through new building construction and demolition. National Park Service management since 1972 has had a more pronounced impact on the character of the landscape through alteration of historic aircraft circulation patterns, demolition of major buildings, and changes in maintenance that have allowed open airfield to grow into woods.

The Analysis and Evaluation chapter provides recommendations regarding the historic significance and historic character of the landscape. These pertain to updating the existing National Register historic district documentation to document significance under Criteria A and C in the areas of both transportation and military history under city and Navy ownership. The present listing documents significance related only to the municipal airport under the area of transportation. The Navy's World War II expansion of Floyd Bennett Field into Naval Air Station (NAS) New York left a lasting imprint on the character of the landscape and was associated with significant operations in the World War II home front. Further research and evaluation may be required to fully document other potential areas of significance, such as architecture, engineering, and military history.

As part of the expansion of the statement of significance, it is recommended that the period of significance for the property be extended to 1945 to incorporate the World War II history of Floyd Bennett Field. The later period of Navy administration during the Cold War is not recommended for inclusion within

the period of significance because available documentation does not indicate that use of the field was associated with historic events in the area of military history. NAS New York after 1945 functioned primarily as a Navy and Air Force reserve center. Aside from some new construction during the Korean War that adapted the airfield to jet aircraft, the Navy did not undertake a comprehensive program of improvements to the World War II-period landscape. Based on the level of integrity in the landscape and the lack of militarily significant associations after World War II, it does not appear that further evaluation under other areas of significance would extend the period of significance beyond 1945, with the possible exception of the period of significance for the Coast Guard Air Station. Little documentation was found for this report on the role of the air station during the Cold War and its associated physical improvements, including a new seaplane ramp and helicopter landing pad, barracks, a memorial, and several secondary buildings built between the 1950s through the 1970s.

The Analysis & Evaluation chapter also recommends expanding the existing historic district boundaries to incorporate those portions of NAS New York landscape, including the Coast Guard Air Station, that retain integrity to the World War II period. The proposed expanded boundaries correspond with the entire airfield, Hangar Row, the Aviation Patrol Base, and the Coast Guard Air Station. The North 40 Natural Area, location of the Navy's ammunitions-communications area, and the South Administrative Area, location of the main barracks area, west barracks area, and seaplane base along Rockaway Inlet, are excluded from the enlarged boundaries due to lack of integrity in the landscape resulting from building demolition, new construction, and change in setting from open field to woods. The seaplane base, outside of the CLR project area because it is under separate federal administration by the Department of Defense, has lost integrity due to the construction of large buildings in the 1970s used as a Marine Corps Reserve Center. Depending on future documentation under other areas of significance, it is possible that resources outside of the proposed district boundaries, such as individual buildings, structures, and archeological sites, may meet the criteria for listing in the National Register. However, based on the level of integrity in the landscape, it is unlikely that additional research would further expand the proposed boundaries with the possible exception of the North 40 Natural Area where the concentration of World War II ammunitions magazines, if intact, may warrant incorporation into the district for their significance in architecture and engineering. These magazines were not inventoried due to lack of access from dense vegetation.

The landscape evaluation section of the Analysis and Evaluation chapter identifies all landscape features that existed during the historic period (1928-1945) and remain largely unaltered as contributing to the historic character of the

landscape. Features added after 1945 are evaluated as non-contributing and either compatible with or detracting from the historic character of the landscape. Several landscape features are not evaluated due to lack of documentation on their historic and/or existing condition. A total of 134 landscape features are evaluated within the expanded historic district, including seventy-three, contributing; fifty-one, non-contributing; and ten, unevaluated.

PRELIMINARY TREATMENT RECOMMENDATIONS

The report concludes with preliminary recommendations on the treatment of the cultural landscape within the proposed expanded boundaries of the Floyd Bennett Field Historic District. Treatment of the landscape warrants further study and elaboration in a full treatment plan (Cultural Landscape Report Part II) that would implement the management direction of the new Gateway General Management Plan anticipated for completion within the next few years. The preliminary treatment recommendations in this report include definition of an overall treatment approach that identifies the character of the landscape in 1945 as a benchmark for treatment. This treatment date would allow interpretation of both the municipal airport and World War II periods. Given its distinct spatial limits and recent park restoration efforts, the airport entrance area is recommended for a separate treatment date of 1941 to focus interpretation on the municipal airport period. The report identifies a number of general treatment issues and recommends specific tasks that would enhance the historic character of the landscape. These issues and tasks pertain to upcoming projects to replace eight miles of underground electrical lines and build two new entrances off Flatbush Avenue, as well as to the growth of woods on historically open airfield and the loss of historic circulation patterns.

ENDNOTES

- 1 Robert Page, Cathy Gilbert, and Susan Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, (Washington D.C.: U.S. Department of the Interior, National Park Service, Cultural Resource and Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998), 129.
- 2 Suzanne Keith Loechl, Samuel A. Batzli, and Susan I. Ensore, "Guidelines for Documenting and Evaluating Historic Military Landscapes: An Integrated Approach" (AEC Technical Guideline, prepared by U. S. Army Construction Engineering Research Laboratories, c.1995), 3.
- 3 According to *NPS-28: Cultural Resource Management*, a thorough level of investigation is defined as reviewing "published and documentary sources of known or presumed relevance that are readily accessible without extensive travel and that promise expeditious extraction of relevant data, interviewing all knowledgeable persons who are readily available, and presenting findings in no greater detail than required by the task directive."

1. SITE HISTORY

The history of the Floyd Bennett Field landscape is a story of dramatic natural and cultural changes set within the enduring character of its seaside location. This story begins with the native environment that remained little changed by humans through the mid-nineteenth century, and then continues with periods of transformation for industrial, transportation, military, and recreational uses. While the industrial period has been largely lost, the natural forces and layers of transportation and military development still characterize the landscape today.

BARREN ISLAND AND TIDAL ESTUARY, PRE-HISTORY TO 1928

Prior to human settlement and development, the site that planners chose for Floyd Bennett Field was a place where water and land intermixed, a naturally dynamic site between the Long Island mainland and the Atlantic Ocean. This remote location together with its access to deep waters suitable for navigation led to industrial development in the nineteenth century, thereby transforming the landscape not only with construction of factories and houses, but also through stabilization of its shifting shoreline and filling of the adjoining estuary.¹

NATIVE ENVIRONMENT

Figure 1.1: Relationship of Jamaica Bay to glacial and ocean forces, overlaid on current map of area. (SUNY ESF, based on Bradford B. Van Diver, *Roadside Geology of New York*, 1985.)



The native environment of Floyd Bennett Field—the natural landscape as it existed prior to human use—was a tidal saltwater estuary along the Atlantic shore of Long Island consisting of an ocean beach and series of islands, marshes, creeks, and small bays. This environment was largely the product of the end of the last

Ice Age and the ongoing erosive force of the Atlantic Ocean. Roughly 50,000 years ago, the Wisconsin glacier reached its farthest southern extent along the East Coast, stopping at present-day Long Island and Staten Island (fig. 1.1). Along its terminal edge, the glacier created a moraine or area of accumulated earth that formed a line of hills to the north of Jamaica Bay running in a general east-west direction. As the glacier melted and retreated northward, its meltwaters deposited sand, silt, and clay south of the moraine, forming a broad outwash plain extending into the ocean. A river of meltwater formed through the present area of Jamaica Bay, forming a wide delta. With final retreat of the glacier approximately 12,000

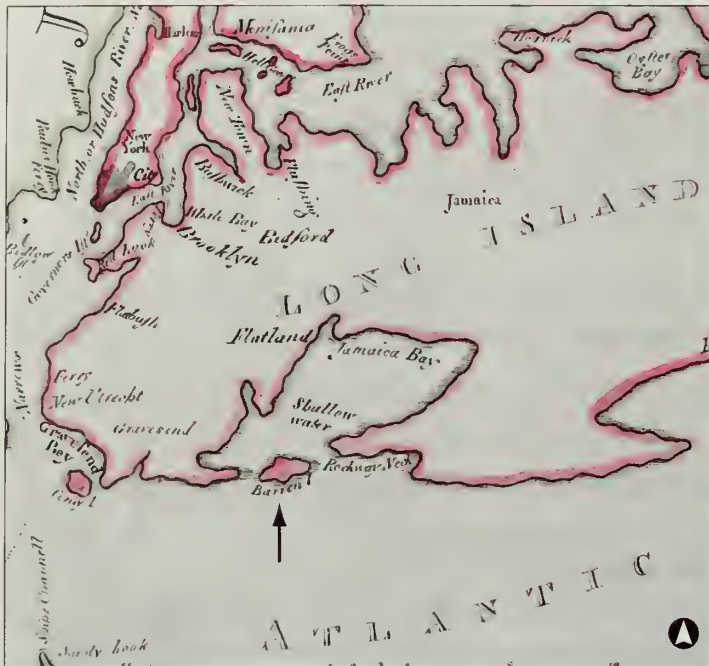


Figure 1.2: "An Accurate Map of Staten Island: With That part of New York, Long Island and the Jerseys..." (October 3, 1776) illustrating Barren Island (indicated by arrow) as one of the barrier beaches along Jamaica Bay. This map also shows Dutch settlements dating to the previous century, including Flatlands to the north of Barren Island. (Digital image ID 434726, copyright New York Public Library, annotated by SUNY ESF.)

years ago, the low-lying delta flooded due to rising sea levels, forming Jamaica Bay.²

In the centuries following the retreat of the glacier, Jamaica Bay became separated from the Atlantic Ocean by a series of narrow, shifting islands and peninsulas that were formed by wind, waves, and westward-running longshore currents (see fig. 1.1). These islands, the largest of which today include Fire Island National Seashore, formed barrier beaches characterized by sand dunes that protected the inland from the ocean surf and currents. These islands shifted with major storms and currents, often creating new openings into the bays. As documented on eighteenth-century maps, Barren Island was one of the barrier beaches protecting Jamaica Bay, together with

Rockaway Neck (later known as Rockaway Beach or Peninsula) to the east, and another peninsula later known as Plumb Beach and Pelican Beach to the west (fig. 1.2). As a barrier beach, Barren Island shifted considerably and frequently prior to construction of wharfs and bulkheads. As late as the mid-nineteenth century, a Brooklyn newspaper reported: "There is scarcely a decade that, through storm and wind, the configuration of the [Barren Island] shore and even interior divisions of it, is not more or less changed."³

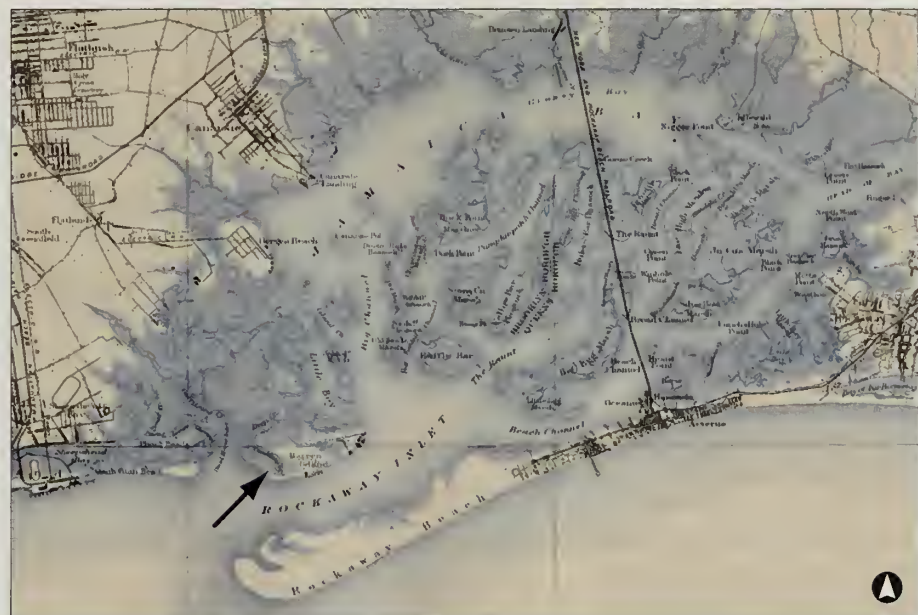
While it is not known when Barren Island first took shape as a barrier island, it underwent considerable reconfiguration through natural forces during the nineteenth century. By 1839, major storms had joined Barren Island with Pelican Beach and Plumb Beach to the west, and created a new opening known as Plumb Inlet that separated the elongated barrier beach from Coney Island to the west (fig. 1.3). The main inlet into Jamaica Bay at this time was Rockaway Inlet along the east side of Barren Island. At some point between 1844 and 1898, major storms once again reconfigured the barrier islands, separating Barren Island from Plumb Beach by creating a new inlet, identified in 1898 as Dead Horse Inlet and today corresponding with Gerritsen Inlet (fig. 1.4, see also fig. 0.3).

One of the most dramatic changes to the system of barrier beaches at Jamaica Bay was the elongation of Rockaway Beach toward the west (see fig. 1.4). While aligned with Barren Island's barrier beach during the eighteenth century, over the next century Rockaway Beach extended into the ocean west and south beyond Barren Island, lengthening more than a mile between 1866 and 1911.⁴ Although created by natural forces, this accelerated lengthening of the beach was caused

Figure 1.3: "Map of New-York and its Vicinity" (John Disturnell, 1839) illustrating the natural changes to Barren Island (indicated by arrow), here shown as incorporating barrier beaches to its west once known as Plumb Beach and Pelican Beach. (Detail, digital image 434632, copyright New York Public Library, annotated by SUNY ESF.)



Figure 1.4: Map made in 1898 illustrating the changes in the barrier islands along Jamaica Bay since 1839 (preceding figure). Note the westward lengthening of Rockaway Beach and the separation of Barren Island (indicated by arrow) from Pelican Beach to the west. (Detail, U. S. Geologic Survey, Brooklyn Quadrangle, 1898, annotated by SUNY-ESF.)



in part from construction of jetties, groin fields, and other beach stabilization structures that were erected to protect beach-front communities. Aside from changing the setting of Barren Island and its ecological function as a barrier beach, the extension of Rockaway Beach also shifted Rockaway Inlet from the east to the south sides of Barren Island, causing the old ocean beach on Barren Island to be washed away. By the early twentieth century, Barren Island had become one of the many interior islands within Jamaica Bay, from which large areas of tidal marsh continued to extend north toward the Long Island mainland (see fig. 1.4).

The native ecosystem of the future site of Floyd Bennett Field prior to development consisted of a diversity of ecological communities, including

marine, estuarine, and terrestrial systems within what is today classified as the Coastal Lowlands ecozone.⁵ Prior to the extension of Rockaway Beach in the early nineteenth century, the southern shore of Barren Island would have been a marine intertidal sand beach (ocean beach), characterized by rough, high-energy waves with high fluctuations in salinity and moisture, with no vegetation but abundant with marine life and shorebirds. Above the high-tide level, the beach would have transitioned to a maritime dunes community, dominated by grasses and low shrubs, including beach grass, dusty miller, beach heather, bearberry, beach plum, poison ivy, and possibly stunted pitch pines or post oaks.⁶ By the late nineteenth century, these ecosystems largely disappeared from Barren Island through erosion from currents in Rockaway Inlet, as well as nineteenth-century industrial development.



Figure 1.5: View of remnant native beach, dune, and shrub communities on Barren Island, view looking southwest from Flatbush Avenue, 1931. The purpose of the fence is not known. (Digital ID 731875F, copyright New York Public Library.)

Beyond the ocean beach and dunes, the native ecosystem of the uplands of Barren Island—approximately 200 acres in the late nineteenth century—encompassed maritime shrubland and grassland communities that occur on dry seaside headlands exposed to offshore winds and salt spray (fig. 1.5). Within the shrubland, species may have included many of those on the dunes, along with eastern red-cedar, Atlantic white-cedar, shining sumac, highbush blueberry, American holly, and shadbush.

The grasslands, distinguishable from the shrubland by dominance of grasses rather than shrubs, may have included bluestem, common hairgrass, poverty grass, Pennsylvania sedge, rush, Indian grass, Atlantic golden aster, bayberry, and bitter milkwort.⁷

The majority of the future 1,300-acre site of Floyd Bennett Field beyond the ocean beach, dunes, and uplands of Barren Island was an estuarine intertidal ecosystem dominated by tidal creek and salt marsh communities. The numerous tidal creeks that meandered through the estuary were rich in marine life, and were probably lined by widgeon-grass. High salt marsh was found in areas subject to periodic seasonal flooding, and was dominated by salt-meadow grass, cordgrass, spikegrass, and black-grass. Low salt marsh occurred in areas extending from mean high tide down to mean sea level that were subject to regular flooding. Characteristic vegetation included cordgrass, glasswort, salt marsh sand-spurry, and various algae that formed dense mats.⁸

CANARSIE HOMELAND

On the eve of European contact in the sixteenth century, Long Island was inhabited by the Lenape people, members of the Algonquian linguistic family who lived along the mid-Atlantic coast and its inland watershed. Known by the English as the Delaware Indians, the Lenape lived in semi-autonomous groups associated with specific geographic places. With abundant marine life and forests, the location of their seasonal camps allowed them to live primarily by fishing and hunting within seasonal camps. Their dwellings, called longhouses, were made of saplings covered by bark and were built to be moved in keeping with their nomadic life.⁹ It was probably not until around the time of European contact that the Lenape began to farm extensively and settle in more permanent villages.¹⁰ Much of their Long Island homeland remained forested, with expansive open areas in the marshes along the shores and inland waterways.



Figure 1.6: Approximate location of Canarsie and Rockaway archeological settlement sites around Jamaica Bay in the eighteenth century. ("An Accurate Map of Staten Island: With That part of New York, Long Island and the Jerseys...", October 3, 1776 [figure 1.2], annotated by SUNY ESF based on Frederick Black, *Jamaica Bay: A History*, 1981, and URS Corporation, "Modified Phase IA Cultural Resource Inventory, 2005.)

The western end of Long Island was home to two Lenape groups at the time of European contact in the sixteenth and seventeenth centuries: the Canarsie (also spelled Canarsee, from the native *Canaryssen*), who occupied most of present-day Kings County (Brooklyn); and the Rockaway (probably from the native *Rechqua Akie*), who lived in southern Queens and Nassau Counties. Jamaica Bay, from the native name *Yemacah*, straddled the two homelands.¹¹ Within the Canarsie homeland was the western part of the bay, including Barren Island and the future site of Floyd Bennett Field. Archeological study over the

years has identified a number of Canarsie and Rockaway sites around Jamaica Bay. Those near the site of Floyd Bennett Field include Narriock near Sheepshead Bay, Ryders Pond (Shanscomacoke) at Brooklyn Marine Park, Winnipague at Bergen Beach, and Keskaechqueren at the present neighborhood of Canarsie (fig. 1.6). Keshkaechqueren, a settlement dating to the period of contact with Europeans, is believed to have been the chief community of the Canarsie people at that time. This site was described as being a village with immense shell heaps and extensive fenced agricultural fields.¹²

The Lenape named Barren Island, "Equendito," the meaning of which has been lost. While historians and archeologists have uncovered no evidence of their use of the island, the Lenape most likely fished off its shores and perhaps set up seasonal campsites on its uplands.¹³

THE TOWN OF FLATLANDS

The arrival of European settlers on Long Island in the seventeenth century forever changed the Canarsie people as well as their native landscape. In June 1636, more than a decade after arrival of the Dutch on Manhattan Island and establishment of the colony of New Netherlands, Dutch speculators purchased from the Canarsie approximately 15,000 acres along the southwestern side of Jamaica Bay, north of Barren Island. They subsequently conveyed the land to Dutch settlers who established farms in the woods, grasslands, and fields inland from the bay. To the new settlers, the flat topography and marshes were a familiar landscape that was reminiscent of their Dutch homeland. By 1654, a small settlement known as Achtervelt and later renamed Amersfoort developed at the present intersection of Flatbush and Flatlands Avenues, two old Indian paths about two miles northwest of Barren Island.¹⁴ With transfer of New Netherlands to British rule in 1664, Amersfoort was organized into the Town of Flatlands.

By 1684, Canarsie leaders had signed twenty-two land conveyances, transferring much of their homeland to Dutch settlers, including Barren Island.¹⁵ While the Canarsie initially retained rights to small areas of land, including their fields at Keskaechqueren (Canarsie), the widespread transformation of their hunting grounds into farms left little to sustain their traditional life, and many moved away. At the same time, fights with the Dutch and the introduction of European diseases, to which they had no natural resistance, decimated the native populations. The Dutch settler Daniel Denton wrote in 1670 how he "...admired how strangely they [Native Americans] have decreast by the Hand of God. ...; for since my time, when there were six towns, they are reduced to two small villages."¹⁶ By the end of the seventeenth century, the Canarsie were largely gone from their native Long Island homeland.

While Dutch settlement occurred primarily in the interior areas away from the marshy shoreline, Jamaica Bay, including Barren Island, provided valuable natural resources for the settlers. Aside from its rich fisheries, the grasslands and marshes supplied reed grass, salt grass, and hay to feed to livestock.¹⁷ A Dutch visitor to Flatlands in October 1679 described this landscape of marsh and agriculture, recalling its similarity to the Netherlands:

There is toward the sea [Atlantic] a large piece of low flat which is overflown at every tide, like the schoor [marsh] with us, mirry at the bottom, and which produces a species of hard salt grass or reed grass. Such a place they call valey and mow it for hay, which cattle would rather eat than fresh hay or grass. . . Their adjoining corn lands are dry and barren for the most part. . . All the land from the bay [Jamaica Bay] to 't Vlacke Bos [Flatbush, village to the northwest of Flatlands], is low and level without the least

*elevation...[the] meadow (schoor), like all the others, is well provided with good creeks which are navigable and very serviceable for fisheries.*¹⁸

Throughout the colonial period and into the late nineteenth century, the Town of Flatlands remained agricultural, as reflected in an account published in 1839:

“The surface of this town is, as its name indicates, a perfect level; the soil, a light sandy loam, warm and pleasant to till, and from the skill and industry of its farming population, yields a large amount over and above the wants of its inhabitants.”¹⁹ Fishing also was an important part of the economy, centered at Canarsie Landing, the town’s only port. Despite its nearness to the burgeoning city of Brooklyn, the population of Flatlands grew slowly, from 256 in 1698 to 810 by 1840.²⁰ Development was concentrated along two roads: Flatbush Avenue, also known as the Ferry Road, running southwest



Figure 1.7: Map of western Long Island made in c.1844 illustrating the rural setting with the City of Brooklyn well to the northwest. The map shows Barren Island at the lower right (“Barren Id”) attached to Pelican Beach. The shaded area indicates the current approximate limits of Floyd Bennett Field. (E. & G. W. Blunt, *New York Harbor and Entrance*, c.1844, digital image 434593, copyright New York Public Library, annotated by SUNY ESF.)

from Brooklyn where the ferry ran to Manhattan; and King’s Highway, also known as Flatbush Avenue, running roughly parallel to the ocean and Jamaica Bay shore (fig. 1.7). The only substantial community in the town at this time was the hamlet of Flatlands, formerly Achtervelt, which consisted of a collection of houses, stores, and a church at the intersection of the two major roads. Several secondary roads extended south a short distance from Flatlands, but terminated at the edge of the marshlands, well north of Barren Island.

The Town of Flatlands began to grow during the mid and late nineteenth century, nearly tripling its 1840 population to 2,286 by 1870.²¹ Despite this, it remained rural and the extensive marshlands along Jamaica Bay stayed largely undeveloped, although storms had reconfigured them considerably since 1844. As shown on an atlas of the town published in 1873, the hamlet of Flatlands had expanded and

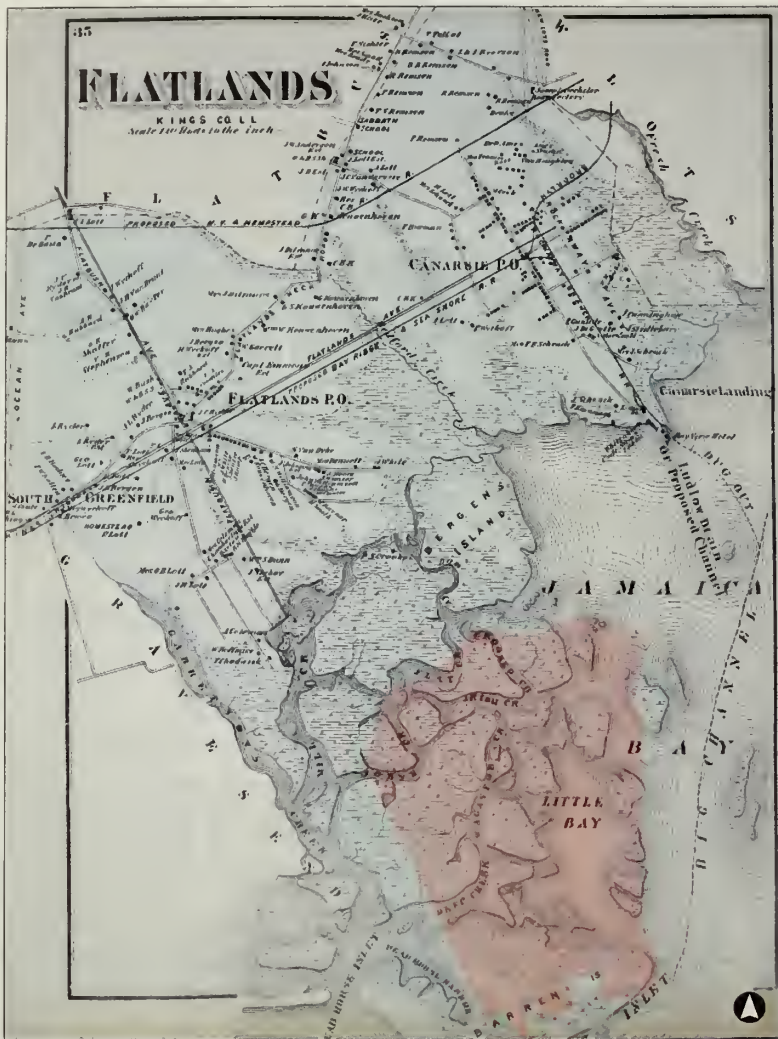


Figure 1.8: Map of the Town of Flatlands in 1873 showing growth since the 1840s (compare with Figure 1.7) and marshlands extending south to Barren Island. The map does not show the small amount of development that existed at the time on Barren Island (the lower part is cut off on the original). The shaded area indicates the current approximate limits of area of Floyd Bennett Field. (F. W. Beers, *Atlas of Long Island, New York, 1873*, digital image 1527273, copyright New York Public Library, annotated by SUNY ESF)

BARREN ISLAND

Despite its isolation from the rest of Flatlands, Barren Island appears to have figured prominently as a geographic place since prior to the arrival of the Europeans, as reflected in its naming by the Canarsie, *Equendito*. In 1664, the year of transfer to English rule, the Canarsie leaders Wawnatt-Tappa and Kackawashe sold Barren Island to Samuel Spicer and John Tilton Senior, twenty-eight years after selling the adjoining 15,000 acres that became the Town of Flatlands.²³ A nineteenth-century history recorded that at the time of its initial sale, Barren Island was substantially larger than it was in the nineteenth century, and “covered with cedar and other timber.”²⁴ The Dutch called the island *Beeren Eylant*, or Bears Island, from which the modern name was purportedly corrupted.²⁵ The name Barren Island perhaps also reflects changes to the landscape from clearing of its trees during colonial times, notably Atlantic white-cedar that dominated the marshy shorelines of Long Island and was widely used for roof and siding shingles. The name Barren Island could have also simply reflected the remote and expansive character of the environment.

a new community, South Greenfield, had developed to the west along Kings Highway (fig. 1.8). Canarsie had grown from a string of perhaps six houses into a community larger than Flatlands, apparently due to its port and location along the Brooklyn & Rockaway Branch Railroad.

The growth of Flatlands continued through the late nineteenth century as urban development extended south and east from the City of Brooklyn. In 1896, the Town of Flatlands, which by then had more than doubled its 1870 population, was incorporated into the City of Brooklyn, which in turn became the Borough of Brooklyn as part of the establishment of Greater New York City in 1898.²² While this change in municipal boundaries brought the old farming and fishing community into the boundaries of the great metropolis, a remote part of the town—Barren Island—had already been indirectly transformed by the growth of New York City.

Although it bordered the main inlet into Jamaica Bay, Barren Island remained largely undeveloped and uninhabited for more than a century after its 1664 purchase. For most of the seventeenth and eighteenth centuries, the island was probably used for harvesting salt hay and for grazing.²⁶ The island was accessible by foot from the mainland at low tide, although it would have been a long, difficult walk from Flatlands across more than a mile of tidal flats. Aside from informal grazing and harvesting, the earliest documented land use was for mining sand, which was dug up on the island's ocean beach and shipped to New York. The person who leased Barren Island for this purpose, William Moore, began mining sand in the 1740s, probably choosing the site for its access to deep water provided by Rockaway Inlet that bordered the east side of the island.

In 1762, when Moore described Barren Island as being vacant and unoccupied, coastal storms had probably already reduced its size considerably.²⁷ Although still

a substantial part of the barrier beaches protecting Jamaica Bay, Barren Island by the late eighteenth century was not much bigger than the adjoining islands and peninsulas to its east and west (see fig. 1.2).²⁸

Early Development, 1800-1850

By about 1800, the first recorded buildings had been constructed on Barren Island by a person named Dooly (also spelled Dooley). One of these included an inn that catered to fishermen and was located on the east side of the island near Rockaway Inlet. Another was a home for Dooly's family on the west or inland bay side. While the appearance of these buildings is not known, their location was documented on a survey of western Long Island made in 1818 (fig. 1.9).²⁹ The inn operated throughout the next several decades, and was still documented as a hotel on an 1852 map. Over this period, the business changed hands and several other families moved to Barren Island and built houses, of which there is little record. Whether these people owned the land

or leased it is not clear, although by 1835 the island had been divided into five separate parcels.³⁰

The landscape of Barren Island was suggested on the 1818 survey as having dunes and scattered cover of trees. By this time, the island had become connected to the adjoining barrier beach to the west, with the ocean beach named Pelican Bar (see fig. 1.9). The survey showed Rockaway Inlet along the southeastern side of Barren Island. This same general configuration to the island was documented on an 1839 map, at the beginning of what was apparently a stormy period in which the island was substantially reshaped (fig. 1.10).³¹ By 1844, the island had become integrated with Pelican Bar, also known as Pelican Beach, to the west and Rockaway Inlet had



Figure 1.9: An early nineteenth-century survey showing location of two buildings (indicated by arrows) on Barren Island belonging to "Dooly." By this time, Barren Island had become connected to the adjoining barrier beach to the west. (Detail, Charles Lofs, *Topographical Survey of Western Part of Long Island...*, 1818, reproduced in Ingrid Wuebbler and Edward M. Morin, "Modified Phase I A Cultural Resources Inventory, Floyd Bennett Field," 2005, annotated by SUNY ESF.)



Figure 1.10: Map showing the configuration of Barren Island in 1839 prior to significant reconfiguration due to storms in the early 1840s. The present site of Floyd Bennett Field probably corresponds with the upper right (east) half of Barren Island. (D. H. Burr, Map of New York City and Vicinity, 1839, digital image 1260604, copyright New York Public Library, annotated by SUNY ESF.)

widened, with a depth of nearly thirty feet directly along the Barren Island shore (see fig. 1.7).³² The deep inlet, where the waters and marine life of Jamaica Bay flushed in and out daily, were most likely the conditions that made Barren Island a lure for anglers.

Barren Island was probably a well-known landmark to sailors during the early nineteenth century, given its location along Rockaway Inlet and proximity to increasingly busy New York harbor, with its fishing and cargo ships heading up the Hudson River

and through the Erie Canal to the Great Lakes. The ocean waters near Barren Island were mostly shallow, with small islands known as breakers extending out from Rockaway Inlet. Just east of the inlet were the Rockaway shoals, scene of the wreck of the English ship, the *Bristol*, on November 21, 1836 that claimed the lives of as many as sixty people.³³ The location of the wreck was indicated on period maps (see fig. 1.7, 1.10). During the same decade as the wreck, Barren Island secured fame as the site of buried treasure. An 1839 history of Long Island noted: “It was upon Barren Island that the notorious pirate Gibbs [Charles Gibbs], and his associates in crime, secreted a portion of the money that they had plundered upon the high seas, part of which was only recovered.”³⁴ There were also tales of Captain Kidd burying his treasure in one of the island’s “many sandhills or sinks.”³⁵ The depth of the waters in Rockaway Inlet along the shore of Barren Island would have made it relatively easy to dock a large ship such as Gibbs and Kidd might have pirated.

Industrial Heyday, 1850-1919

Beginning in the 1850s during a period of tremendous growth for New York City and Brooklyn, remote Barren Island became the home of a succession of industrial plants, lured by the deep-water access provided by Rockaway Inlet. Along the south shore of Kings County and across Long Island, ports were mostly limited to the bays behind the barrier beaches. Direct portage on the ocean in almost all places was not feasible due to the shallow depths that would have required ships to anchor far off shore. Dredging was not an answer due to the continually shifting sands from the longshore currents. The rushing currents through Rockaway Inlet, however, provided continual natural dredging that maintained deep-water access to Barren Island, one of only a few such places along the entire ocean shoreline of Long Island. Despite this, a drawback of Barren Island for industry was the lack of land routes and physical isolation from the mainland.

For a certain industry, however, remoteness was beneficial. Beginning in the middle of the nineteenth century, offal industries—industries that dealt with the highly odorous processing of fish and other dead animals and refuse—found Barren Island an ideal location. Here far from any community, they produced such things as horsehair, hides, glue, tallow, grease, and fertilizer in the form of dried blood, ground bone, and fish waste that was brought in by boat. The growth of fish processing on the island paralleled the growth of the menhaden (an oily herring-like fish) industry that flourished in Long Island waters following the Civil War. The first known operation at Barren Island, established in the 1850s by Lefferts R. Cornell, processed horse and other animal carcasses shipped from New York and Brooklyn. The firm E. P. White and Sons (later White Brothers) opened its fertilizer factory around 1870, based on its sole contract with Board

of Health to remove dead animals from city streets, a contract it would retain for more than sixty years.³⁶ As shown on an 1877 map, these early industries were clustered on the uplands along the south shore and eastern tip of Barren Island, which since the westward growth of the Rockaway Peninsula was then protected from ocean waves. The western-most factory, later the Products Manufacturing Company, was located near the present foot of Flatbush Avenue. It processed horse and fish offal and became

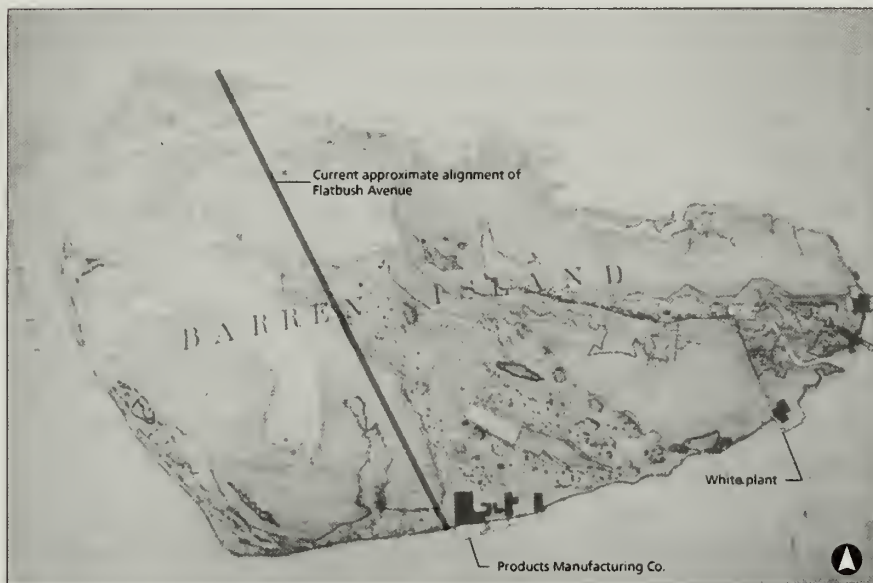


Figure 1.11: A map of Barren Island made in 1877 showing location of factories and other buildings on upland areas. The white buildings or structures are not identified. (Copyright Queen Public Library, Long Island Division, annotated by SUNY ESF.)

purportedly the largest fertilizer plant of its kind in the world.³⁷ Farther east was the White fertilizer factory, and another two factories occupied the eastern tip. These factories made use of the wetlands and bays at the north or inland side of Barren Island for dumping their refuse. A narrow bay at the southwest side of the island was apparently one of the main dumping grounds for the carcasses of dead horses. The 1877 map indicates “Dead Horse Inlet” on the west side of the island, which fed into a narrow inland bay that was known as Dead Horse Harbor (fig. 1.11, see also fig. 1.8).

Aside from their general footprint and associated wharfs extending out into Rockaway Inlet, little is known about the physical appearance of these early factories. A later photograph of what may be the Products Manufacturing Company shows a complex of multiple gable-roof buildings up to four stories in height, tall brick and iron chimney stacks, iron tanks, and a horse-drawn railway



Figure 1.12: One of the Barren Island fertilizer and waste processing factories, possibly the Products Manufacturing Company, showing multiple buildings, tall chimney stacks, and elevated horse-drawn railway, c.1900. The direction of view is not known. (Photograph 18859, Gateway National Recreation Area Museum Collection.)

Figure 1.13: Detail of an 1898 coastal survey (Figure 1.4) showing two distinct clusters of development on the uplands of Barren Island. (Detail, U.S. Coast and Geodetic Survey, Brooklyn Quadrangle, 1898, annotated by SUNY-ESF.)



for transport of waste materials to and from the processing buildings (fig. 1.12). Many of these factories had a fleeting existence, due not only to a relatively frequent turn-over in operation and ownership (there were upwards of thirty-two companies that operated on Barren Island between the 1850s and the 1930s), but also due to fires and to the physical instability of the sandy land on which they were built, which could be quickly undermined by the swift currents of Rockaway Inlet. There were several instances of major landslides that consumed entire factories, such as the one in 1890 in which the Wimpfheimer fertilizer plant at the eastern tip of the island fell into the inlet.³⁸

The establishment of the offal industries on Barren Island led to development of a small community, reflecting not only the nineteenth century pattern of workers living close to factories, but also the remote nature of the site away from established populations. The 1880 census listed twenty-three residences on the island and a population of 309 residents. Six of the residences were company-owned dormitory-style housing for the laborers working at the factories, housing anywhere from twenty-two to fifty-five single men.³⁹ The earliest community was probably located at the more protected southeastern end of the island, where the Dooly inn had been located as well as the first industries. Houses and commercial establishments were built inland, behind the waterfront factories (see fig. 1.11). By 1885, this area contained the "W. Dudley Hotel"—possibly the successor to the Dooly establishment—and a "U.S. Boat House"—possibly a Coast Guard station—near the eastern shore along Jamaica Bay.⁴⁰ As early as the 1870s, another cluster of development had formed on the south-central part of the island around the Products Manufacturing

Company just east of the present-day foot of Flatbush Avenue, as shown on an 1898 survey (fig. 1.13).

By the 1890s, fish-oil shortages and a national economic depression caused a downturn in the Barren Island industries, but a turn-around came by the middle of the decade due to the opening of

the New York Sanitary Utilization Company, an enormous concern founded in 1896 with \$1,000,000 in capital to process all of New York City's waste based on a five-year contract. Headed by the White brothers, the new waste-processing facility was built on the southeastern tip of the island, adjoining the family's earlier fertilizer and horse-processing plant established in c.1870. The location was cited as ideal for the purpose, as reported by the *New York Times* in September 1896:

*Barren Island affords an excellent site for this new industry. Its position in Jamaica Bay is so remote from all important lines that few New-Yorkers would know how to find it. It has a limited neighboring population to be annoyed by any offensive odors, and it is within convenient distance of the city.*⁴¹

The company's plant employed the modern Arnold sanitary process which involved sanitary processing of garbage that was transported to the site by boat and then carried by conveyor up an inclined plane into the processing plants where it was boiled.⁴² Covering upwards of sixteen acres, the complex included an extensive wharf along the Rockaway Inlet with big derricks and rigging equipment; large frame boiler buildings with a tall brick chimney where garbage was boiled at 300 degrees for five hours; a three-story brick digester building where the boiled garbage was processed into oils and fertilizers; a compacting plant housing fifty-two hydraulic presses; and drying plants, which occupied two great buildings a city-block long.⁴³ In 1906, the complex suffered a devastating fire that also consumed many other buildings on Barren Island, but the company rebuilt the complex, consisting of massive new concrete buildings surrounded by a stockade. The rebuilding included a new chimney built of yellow brick that rose 227 feet and could purportedly be seen twenty miles out at sea.⁴⁴ The factories of the complex and the chimney dominated the horizon as viewed from the

Rockaway Peninsula (fig. 1.14).

Establishment of the New York Sanitary Utilization Company resulted in a spurt of growth in Barren Island. From the 309 residents in 1880, the community increased to a population of 520 residents in 103 households in 1900, with many non-residents on the

Figure 1.14: The New York Sanitary Utilization Company plant looking northeast across the Rockaway Inlet, c.1918. This photograph illustrates the plant as rebuilt following a 1906 fire. The smaller complex to the left is probably the White fertilizer-horse processing plant. (Adams Collection photograph, Copyright Carnegie Library of Pittsburgh.)



island as day laborers. At the time of the 1906 fire, the *New York Times* reported that six hundred families fled the island.⁴⁵ By the 1910s, the population reached its height of approximately 1,500.⁴⁶ This growth led to additional commercial establishments, including a barber, butcher, grocer, dry-goods merchant, hotels, and boarding houses.⁴⁷ Public and religious institutions were also established, including the Roman Catholic Sacred Heart Church and New York City Public School #120, which both opened in 1900. A Protestant church was built on the island around the same time. Although still isolated, the growth of the community made regular ferry service to Rockaway, Sheepshead Bay, and Canarsie economically viable.⁴⁸

By the turn of the century, Barren Island was owned by only several entities. The eastern end of the community existed on a seventy-two acre parcel belonging to the New York Sanitary Utilization Company, with the property held by the White family. Within this lot, the Roman Catholic Diocese of Long Island owned a small parcel containing Sacred Heart Church and rectory. The middle section of the island totaling 110 acres was acquired by Kings County “for charitable purposes” at some point prior to 1899; and the lot to the south was private property, probably owned by the Products Manufacturing Company. Residents either lived in company housing or built their own houses on leased land.⁴⁹

The local population of workers in the fertilizer and waste industries, a mix of African-Americans and European immigrants, was known as a fairly rough crowd. The *New York Times* reported in 1910 that across from the New York Sanitary Utilization Company there was “. . . a small yellow hut in which two policemen are stationed by the city to keep Barren Island’s unruly foreign population in order when the four saloons begin to do their regular nocturnal business.”⁵⁰ Despite this, Barren Island was also home for families as evidenced by the presence of churches and the school. Some residents also farmed the land, probably in small garden plots, and raised animals that were pastured in the meadow that surrounded the community.

Development associated with the growth of the New York Sanitary Utilization Company after 1896 spread westward in a linear fashion from the eastern part of the community along what was known as Main Street, where the majority of buildings faced south toward Rockaway Inlet. With several cross streets, this part of Barren Island contained upwards of forty residences by its height during the 1910s.⁵¹ The older eastern end of Main Street closer to the factories probably contained the commercial area around the intersection of White Street and Bay Street. The area included Sacred Heart Church, a small Gothic Revival frame building with a corner tower constructed in c.1900, with an adjacent two-story rectory (fig. 1.15). The remote western end of Main Street was anchored by



Public School #120, a large, two-story building constructed in 1908 (fig. 1.16). Adjoining the school to the east were playgrounds with a flag pole, and at the rear was a water tower. To the west was a two-story residence that served as the teachers' residence.⁵² As was characteristic of most properties along Main Street, the school and church were enclosed by simple wood paling fences, which probably served multiple functions including exclusion of farm animals and as sand traps.



Just east of the school, Main Street was connected to the western part of the Barren Island community by a 700 foot-long boardwalk bridge across the marshes (fig. 1.17). Anchored by the Products Manufacturing Company plant and adjoining factories to the west near the present foot of Flatbush Avenue, this part of the community may have initially been the larger part prior to the establishment of the New York Sanitary Utilization Company in 1896. It contained upwards of forty one-story bungalows, the two-story Empire Hotel, a ground-level water tank, a post office, and factory offices.⁵³ Unlike the eastern part of Barren Island, development in this area was arranged in a haphazard fashion, with buildings linked by a series of walks and narrow roads that may have been shaped by uneven topography, possibly remnant dunes.



The marshlands and waterways to the north and west of Barren Island changed with the

Figure 1.15 (top): Barren Island's Sacred Heart Church and rectory, from a later photograph looking northwest across Main Street, 1931. Fences enclosed most buildings on the island. The adjoining building (right) may have been a store. (Digital image 731878F, copyright New York Public Library.)

Figure 1.16 (middle): Public School #120, looking north across west end of Main Street, 1931. The building to the left was the teachers' residence. (Digital image 731866F, copyright New York Public Library.)

Figure 1.17 (bottom): View looking southwest from Main Street across the boardwalk known as the Long Bridge leading to the southwestern part of the Barren Island community, 1931. By the time of this photograph, the Products Manufacturing Company complex which would have dominated the horizon, had been removed. (Digital image 731869F, copyright New York Public Library.)

development of the island as well as regional plans for commercialization of Jamaica Bay. Much of this area, particularly the shallow waters adjoining Barren Island, was used as a dumping ground. This practice had begun as early as the 1870s as indicated by the naming of Dead Horse Bay, but probably increased with growth of the New York Sanitary Utilization Company, which apparently dumped refuse it could not process into other goods, such as glass bottles.⁵⁴ Beginning in 1910, the city began work on improving Jamaica Bay into a major port, with plans calling for filling the estuary north of Barren Island and constructing fourteen piers off the fill extending into Jamaica Bay (see fig. 1.4). In 1918, the city approved construction of the piers, but only built one. This pier, located near Barren Island, was intended for unloading debris for use in creating the filled land, which by the 1920s was 700 feet wide from the shore of Little Bay on the west to Jamaica Bay on the east, and extended for over a mile north from Barren Island.⁵⁵

Industrial Decline, 1919-1928

While the Barren Island industries had suffered periods of decline in the past, the final blow occurred in the years after World War I, brought on by a combination of changes in regional development, political opposition to waste processing within the city, changes in transportation, and continued planning for redevelopment of Jamaica Bay. Up until World War I, Barren Island continued to serve as New York City's dump through its contract with the New York Sanitary Utilization Company. Two other plants were still operating at the time: the White family's fertilizer/horse-rendering plant and the Products Manufacturing Company. The political opposition to the plants arose over the strong, foul odors that blew into surrounding communities. To Barren Island residents, however, these odors had long been part of their identity, according to one observer:

Odors, pervading the entire history of the island, contrived to bring it the only measure of prosperity—nam, fame—that it has known. What the Grand Canyon is to Colorado, [sic] the aroma of garbage and dead animals is, in a sense to Barren Island. As long as the city continued to empty its ash cans and dead pets in their factories, the people were content. The olfactory sense is easily fatigued, and although each northwest wind brought new complaints from the Rockaways across the bay, the islanders remained untroubled.⁵⁶

While political opposition to the odors began as early as 1899 when the city and state legislature considered bills to halt the waste industries, it was not until the years leading up to World War I that it mounted to the point where the city took action to close down the plants. Much of this political pressure arose in tandem with increasing suburban and seasonal development of nearby areas on Rockaway Peninsula, Flatlands, and elsewhere. By World War I, the Rockaway

Peninsula barrier beach had extended west well beyond Barren Island, allowing development to move closer to Barren Island. Directly across the Rockaway Inlet from Barren Island, the U.S. military established Fort Tilden and the Rockaway Naval Air Station in 1917. Developers were also looking to the barrier beach to the west of these bases to build summer communities.

While the military personnel apparently did not complain about the odors, those who spent their summers along the ocean did. The Citizens' Committee of Nesposit, the Rockaway Beach community closest to Barren Island, was organized to "obtain relief from the odors created by the garbage disposal plants on Barren Island," as reported in 1915 by the *New York Times*. The article cited the president of the Citizens' Committee who stated that there were 750,000 people living within a radius of eight or ten miles of Barren Island "who suffer because the proprietors of the plants are not made to keep within the law."⁵⁷



Figure 1.18: Remains of the Barren Island community showing dilapidated conditions that spread with industrial decline during the 1920s, photographed 1931. The view is looking east along Main Street with the remains of a New York Sanitary Utilization Company complex in the right background. (Digital image 731866F, copyright New York Public Library.)

With growing political opposition, the city finally decided to end its contract with the New York Sanitary Utilization Company in 1919, leading to the closing of the plant. The White family, organized as the Thomas F. White Company, retained ownership of its property at the southeastern end of Barren Island, but within two years of the plant's closure, began dismantling the massive complex.⁵⁸ The adjoining White fertilizer factory closed around the same time, given its common ownership and the fact that the number of horses on New York streets was declining due to the rise of the automobile.

The Products Manufacturing Company remained the sole industrial plant on the island through the 1920s. The loss of two of the three factories on Barren Island represented a major blow to the island's economy, and by the end of the 1920s, the population had declined from its height of 1,500 down to 400.⁵⁹ This decline led to closure of many of the island's commercial establishments and probably loss of regular ferry service. Many houses were abandoned and the once well-kept streets were no longer maintained (fig. 1.18).

While regional development forced this change indirectly, growth in southern Brooklyn and the Rockaway Peninsula also led to a direct change to the island. Soon after World War I, the city moved on plans to provide access from the western end of the barrier beach to Brooklyn by extending Flatbush Avenue south from Avenue U at Flatlands and establishing ferry service across the inlet to Rockaway Beach. Then-mayor Hylan had identified this project as



Figure 1.19 (above): Aerial view looking southeast across the Flatbush Avenue causeway toward Barren Island, 1928. Visible are remnant wetlands and the stack of the defunct New York Sanitary Utilization Company in the distance. The filling in the foreground was early work on Floyd Bennett Field. (Copyright Smithsonian Institution, reproduced from Porter R. Blakemore and Dana C. Linck, "Historic Structures Report...Floyd Bennett Field," 1981.)

two automobile ferry slips, dominated by large hoists that loomed over the inlet where factories had once stood, was constructed on the west side of Flatbush Avenue. On October 18, 1926, the ferry service and new but still unpaved road were dedicated in a ceremony on Barren Island attended by about 1,000 people including the mayor.⁶¹

The building of Flatbush Avenue was part of a larger regional plan for developing what was then considered wastelands—the extensive marshes along the Brooklyn shoreline and around Jamaica Bay—into developable land. City tax maps from

the 1920s indicate that the area around Barren

Island was to be transformed through a program of road building, channelization, and filling (fig. 1.20). The waterways were to be channelized based on a pierhead and bulkhead line approved by the Secretary of War in 1911.⁶² The entire area of water and wetlands from Barren Island north to Mill Basin—the future site of Floyd Bennett Field—was still proposed for port development. Deep Creek, which was cut off by the Flatbush Avenue causeway, was to be made into Deep Creek Basin. The city's tax map also indicates that the western end of Barren Island surrounding Dead Horse Bay, west of Flatbush Avenue, had been acquired as public park land.

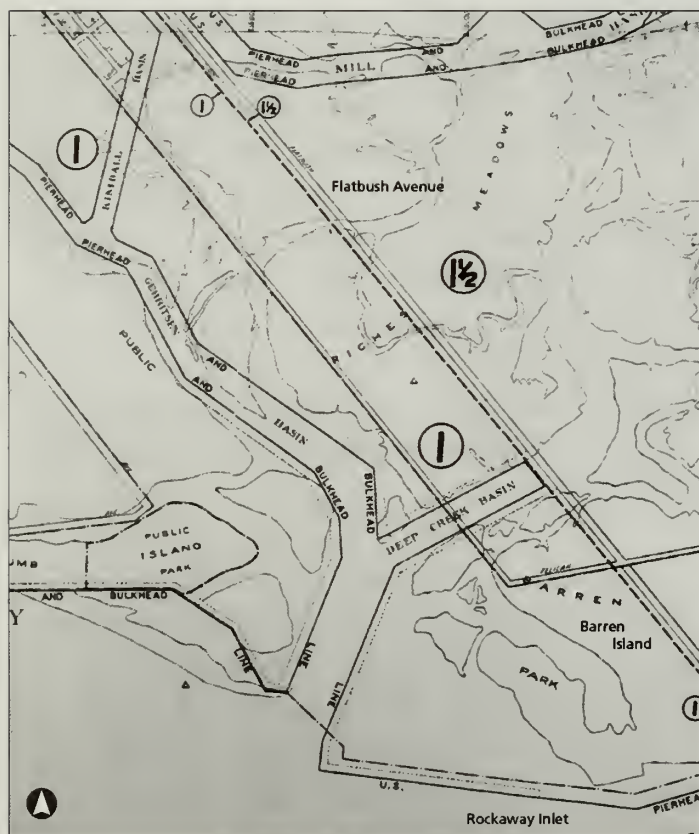


Figure 1.20: City tax map showing planned roads, channels, and park development along newly built Flatbush Avenue, c.1925. The entire parcel marked 1½, comprising the wetlands north of Barren Island, was to be filled north to Mill Basin. (New York City tax records, annotated by SUNY ESF.)

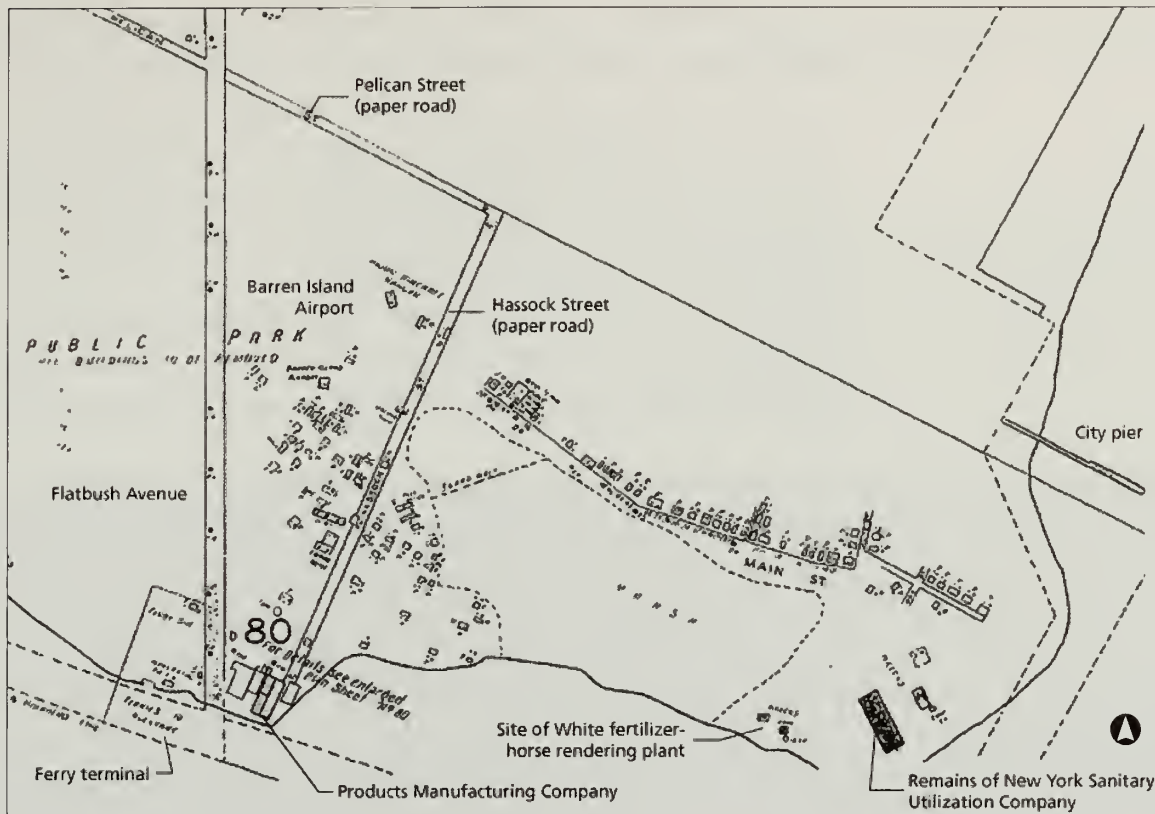


Figure 1.21: A map of Barren Island in c.1930 showing relationship of the community to Flatbush Avenue and the ferry across the Rockaway Inlet, five years after completion of Flatbush Avenue. This map also shows two proposed roads and land to be acquired as a public park, but does not indicate the extension of Main Street to Flatbush Avenue. (Sanborn Fire Insurance Company, Brooklyn, volume 19, sheet 82, 1930, annotated by SUNY ESF.)

While the completion of Flatbush Avenue provided Barren Island with its first vehicular connection to the Long Island mainland, it also signaled the first step in plans that would eventually remove the entire community. Initial plans called for redevelopment of the land to either side of the foot of Flatbush Avenue into a public park that would require clearing of the western part of the Barren Island community (fig. 1.21). Plans also called for new roads, named Pelican Street and Haddock Street, although these were not built. Instead, Main Street was extended west beyond Public School #120 to Flatbush Avenue, and another connection was made with the roads in the western cluster near the Products Manufacturing Company.



The new connection to the mainland provided some initial benefit to the Barren Island community. For a number of island residents, the new road provided ready access to jobs on the mainland, replacing those lost

Figure 1.22: The busy bathing beach on Barren Island's eastern shore, view looking southeast across Jamaica Bay with Rockaway Beach in the distance, 1931. Note cars parked in right distance (probably at end of Main Street), tents, and natural dunes covered in beach grasses. (Digital image 731881F, copyright New York Public Library.)

on the island. With few services left, the new road also probably made it easier for those able to afford a car to purchase groceries and other necessities.⁶³ The new automobile access also attracted visitors to Barren Island's sandy beaches, such as the one along Jamaica Bay, adjoining the city pier and sheltered by grass-covered dunes (fig. 1.22). The extension of Flatbush Avenue also made possible the building of an airfield on the island. Conceived by pilot Paul Rizzo in 1927 and known as Barren Island Airport, the grass strip was located west of Public School #120 and included two hangars (fig. 1.23).⁶⁴ Rizzo probably selected the site for the wide, open spaces and clear sight lines provided by the surrounding wetlands and water. Few island residents probably knew the changes that the establishment



Figure 1.23: View looking east across Barren Island from Flatbush Avenue with Barren Island Airport in the foreground, 1931. A plane and hangar are at the right and the main runway is at left. In the distance is Public School #120 and the chimneys of the defunct New York Sanitary Utilization Company and White horse rendering-fertilizer factory. The building with a cupola in the middle ground is a Protestant church. (Digital image 731873F, copyright New York Public Library.)

of the Barren Island Airport foreshadowed. In 1928, the year after the grass strip was opened, the City of New York would announce plans to build its first municipal airport in the wetlands north of Barren Island.

LANDSCAPE CHARACTERISTICS, 1928 (DRAWING 1.1)

By the end of this period in the late 1920s, Barren Island and the tidal estuary to its north corresponding with the current site of Floyd Bennett Field was a landscape in transition. Newly connected to both the urbanizing Brooklyn mainland and the resort communities and military bases on the Rockaway Peninsula, the site was losing its historic isolation, undermining the essential context for its offal industries. Barren Island would soon succumb to the city's plans for port and park development in the Jamaica Bay region. The following description of the site,

organized by landscape characteristics, provides an overview of the landscape in 1928 on the eve of the construction of Floyd Bennett Field.

Natural Systems and Features

By 1928, the current site of Floyd Bennett Field—covering approximately 1,300 acres of land and water—retained much of its native tidal estuary, but most of the uplands and beach had been altered through development. A small area of sand beach with dunes remained on the eastern side of Barren Island south of the city pier (see fig. 1.22). Along the middle of the island's south side was an area of tidal flats fed by a small creek that meandered through wetlands. The western end of Barren Island remained in more of its natural state than the eastern end, with large areas of wetlands surrounding Dead Horse Bay and dunes with upland woods (see fig. 1.5).

Some of the tidal estuary north of Barren Island had been altered by 1928 through dumping and filling. The wetlands and waterways immediately north of Barren Island, including Dead Horse Bay, Factory Creek, and Black Bank, were probably heavily tainted by decades of industrial dumping. Little Bay was the largest expanse of water, occupying the eastern half of the future airport site. Once rimmed by small marshes including John's Point Marsh, by 1928 Little Bay had become completely separated from Jamaica Bay through filling operations that had begun in c.1911 as part of the city's anticipated port development. West of Little Bay remained extensive tidal marshes, the largest of which was named Riches Meadows. The marshes were crisscrossed by meandering tidal creeks named Deep Creek, Irish Channel, and Factory Creek, and were bordered on the north by Mill Basin, a dredged channel. The construction of Flatbush Avenue between 1921 and 1925 cut through these marshes with a raised earthen causeway, separating Deep Creek in two (see fig. 1.19).

Cluster Arrangement

Development of Barren Island in 1928 was clustered in two areas: near the foot of Flatbush Avenue and along the east end and north side of the island. These southwest and northeast clusters related primarily to the location of buildable uplands, and secondarily to the proximity of the factories, which were located on the south shore fronting on the Rockaway Inlet.

Spatial Organization

Typical of marine and barrier beach environments, Barren Island in 1928 had an open and exposed spatial character created by the expanses of water and marsh as well as the low-lying topography. Within this overall open character were several

minor enclosed spaces defined by trees, dunes, buildings, and structures. Most of the creeks within the tidal estuary were defined by a vertical plane created by tall marsh grasses lining the banks. Along the remnant beaches, such as the Jamaica Bay beach on the eastern side of the island, grass-covered dunes defined a spatial edge between the open, flat beach and the adjoining uplands (see fig. 1.22). Scattered groves of trees also interrupted the overall open spatial character (see fig. 1.5).

The most conspicuous spatial character was created by the developed areas, particularly the large factory complexes that formed a vertical edge along the Rockaway Inlet. By 1928, however, this enclosure had greatly diminished due to removal of some of the buildings, notably at the New York Sanitary Utilization Company complex, which had been delineated by a stockade. Within the residential areas, the northeastern cluster had a strong linear spatial character formed by the row of buildings and fences along the north side of Main Street, bordered by open marsh to the north and south. At the east end of Main Street, several side streets lined on both sides by buildings and the adjoining factories created an area of enclosure. The southwestern cluster had an irregular spatial character due to its largely random pattern of development, tied together by a network of small roads and walks and anchored by the large Products Manufacturing Plant along the shore.

The Flatbush Avenue extension, begun in 1923 and built on a raised causeway, created a north-south corridor through the landscape that would form the boundary of Floyd Bennett Field. Although spatially open, this corridor was marked by a line of utility poles (see fig. 1.19).

Land Use

In 1928, Barren Island and the surrounding estuary was home to a variety of residential, industrial, commercial, religious, agricultural, transportation, and recreational land uses. By this date, only one major factory remained in business—the Products Manufacturing Company located at the foot of Flatbush Avenue, which continued to produce fertilizers from fish and animal offal. Since the closing of the New York Sanitary Utilization Plant in 1919, the island's population had plummeted, resulting in the loss residential uses including both single-family and boarding houses. Commerce, which at the height of the island's industrial activity included a barber, butcher, grocer, dry-goods merchant, hotels, and four saloons, had probably disappeared by 1928, especially given the new access to the mainland provided by Flatbush Avenue. Despite the decline, Barren Island continued to support a public school and a Roman Catholic church. Some of the remaining residents kept farm animals that they pastured in the island's meadows, and many residents also probably maintained small garden plots. Automobile

and air transportation was a recently introduced land-use to Barren Island by 1928 that included the extension of Flatbush Avenue with its automobile ferry terminals, and Barren Island Airport, the small private landing strip built in 1927. The new access allowed people from the mainland to drive to Barren Island for its sandy beaches. Fishing, probably both recreational and small-scale commercial, may have also still had a presence on the island and its surrounding waters, as reflected in a fishing pier that extended into Rockaway Inlet from the middle of the island.

Topography

The constructed land forms within the current site of Floyd Bennett Field by 1928 included extensive areas of fill added since 1911 by the city from the dredging of Jamaica Bay and also by the refuse from the island's garbage plants. The largest area of fill was between Little Bay and Jamaica Bay along the current east side of the site. Other areas of fill included the north end of Riches Meadows along Mill Basin, and the 200-foot wide Flatbush Avenue causeway. While there were no conspicuous topographic features within Barren Island, the uplands and shoreline had been reshaped over time to accommodate development.

Vegetation

Little is known about specific varieties of planted, ornamental, or managed vegetation that existed in 1928 within the current limits of Floyd Bennett Field. Deciduous trees dotted the developed areas of the island, such as around the Sacred Heart Church and near the public school (see figs. 1.15, 1.16). Some residents maintained garden plots, flowerbeds, and small patches of lawn around their houses. Most of the landscape was dominated by native vegetation such as coastal grasses, shrubs, and trees described under Natural Systems and Features.

Circulation

In 1928, the primary circulation feature within the current site of Floyd Bennett Field was the extension of Flatbush Avenue begun in 1923, substantially completed by 1925, and paved by 1928 (see fig. 1.19). In 1926, municipal ferry service to the Rockaways was begun from a terminal with two slips at the foot of Flatbush Avenue on the Rockaway Inlet next to the Products Manufacturing Company plant.

Circulation within the Barren Island community consisted of narrow unpaved roads and walks. Within the northeast cluster, there were several named streets, notably Main Street that ran the length of the community in an east-west direction (see figs. 1.15, 1.18). It connected on the west with Flatbush Avenue through an

extension built soon after the new road was completed in 1925. In the southwest cluster, there was a network of irregular, apparently unnamed streets and walks. A 700 foot-long boardwalk known as the Long Bridge connected the northeast and southwest clusters across the wetlands in the middle of the island (see fig. 1.17). The community also included a number of piers and wharfs that serviced the factories, but by 1928, most were probably abandoned. The runway for Barren Island Airport, constructed in 1927, was turf or bare earth and extended in a north-south direction.

Two roads—Pelican Street extending off Flatbush Avenue and Hassock Street extending south to the Products Manufacturing Company plant—were platted by the 1920s, but never built (see fig. 1.20). These extended from a network of new roads to the west of Flatbush Avenue that were laid out as part of residential and industrial development that never occurred.

Buildings and Structures

In 1928, all buildings and structures were located on Barren Island, the area corresponding with the southern side of the current site of Floyd Bennett Field. They included four general types: industrial, residential, institutional, and commercial. The factories along Rockaway Inlet were the largest and most conspicuous buildings, ranging from massive concrete factories at the defunct New York Sanitary Utilization Company on the southeastern tip of the island, to brick and frame factory complexes of the defunct White fertilizer factory and the still active Products Manufacturing Company (see figs. 1.12, 1.14). Each of these factory complexes featured at least one chimney stack that loomed over the flat landscape; the 227-foot tall yellow-brick chimney at New York Sanitary was the tallest and was a landmark for boats far out at sea (see fig. 1.23). By 1928, portions of the New York Sanitary complex had been demolished, leaving just foundations. Ruins from other factories were probably scattered along the Rockaway Inlet shoreline. Associated with these factories were maritime structures, including bulkheads, wharfs, and piers, most probably built of wood. The largest pier was the so-called City Pier, which was built in 1918 as part of filling operations for a planned major port development along the west side of Jamaica Bay north of Barren Island.

Residential buildings consisted primarily of small, one-story wood-frame houses built in a variety of vernacular styles with shed or gable roofs, front porches, and clapboard siding (see figs. 1.17, 1.18). Most were probably built between 1870 and 1910. The most distinguished buildings on the island were institutional: Public School #120, built in 1908, was a large, neoclassical-style two-story concrete or stucco-faced building with a pedimented gable front, fan-light attic widow, and large multi-paned sash windows (see fig. 1.16). Next door was a house in a similar

style that probably served as the teachers' residence. A water tower stood behind the school. Sacred Heart Church, built in c.1900, was a small Gothic Revival-style frame church with clapboard siding, pointed-arch windows, and a corner tower topped by a short pyramidal spire (see fig. 1.15). It had an associated rectory built in c.1908 with a wide modillioned cornice, front porch, and pointed-arch windows. The Protestant church was a gable-front frame building with a ridge cupola.

Views and Vistas

The relatively level lay of the land and broad expanses of marshes and water made possible expansive views throughout most of the landscape throughout this period. From the shoreline of Barren Island, the southern horizon was lined by the communities on Rockaway Beach. There is little evidence of designed views or vistas, although the length of Flatbush Avenue provided a directed line of sight, as did the runway of Barren Island Airport.

Small-Scale Features

Small-scale features present by 1928 within the current site of Floyd Bennett Field included wood utility poles with street lamps, and wooden picket and lattice fences that lined most of Main Street and probably enclosed most residential lots (see figs. 1.15 to 1.18). These fences were most likely used to keep livestock out and possibly also to trap blowing sand. The public school included several small-scale features, including a fence and a flagpole. The factories had numerous small-scale features, such as tanks and machinery, but there is little detailed visual record of them (see fig. 1.12).

ENDNOTES

1 This period relies primarily on regional maps and a series of photographs in the New York Public Library of the remnant Barren Island community taken during the 1930s, as well as on U.S. Coast Guard surveys and a Sanborn Fire Insurance map made in 1930.

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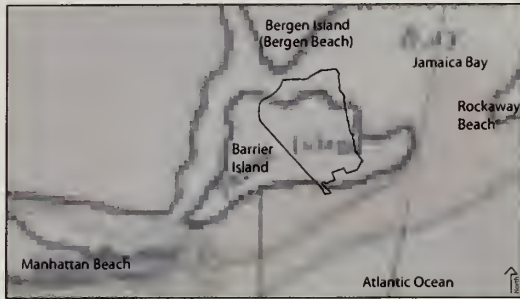
3 "Barren Island," *Brooklyn Union*, 4 September 1876, www.bklyn-genealogy-info.com/Town/1876.Barren.Island.html.

4 National Park Service, Fort Tilden visitor display, reproduced by U.S. Geological Survey, "Breezy Point (Gateway National Recreation Area)," New York City Regional Geology website, <http://3dparks.wr.usgs.gov/nyc/parks/loc69.htm>.

5 New York Natural Heritage Program, *Ecological Communities of New York State* (New York State Department of Environmental Conservation, n.d.), 1, 4, 38.

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- 10 Frederick R. Black, "Jamaica Bay: A History" (National Park Service North Atlantic Regional Office: Unpublished report, 1981), 8; Mangi Environmental Group and Lone Tree Archeology and Environmental, Inc., "Jamaica Bay Units Archaeological Overview and Assessment" (Unpublished report prepared for the National Park Service, September 2005), 47.
- 11 Native American Genealogy, "The Canarsee," Peconic Homestead website, <http://www.peconic.homestead.com/index.html>.
- 12 Black, quoting Bolton, 8.
- 13 Ingrid Wuebber and Edward M. Morin, "Modified Phase 1A Cultural Resources Inventory, Floyd Bennett Field, Jamaica Bay Unit, Gateway National Recreation Area" (Unpublished report prepared by URS Corporation for the National Park Service, April 2005), 5. This report states that John Milner Associates, in a 1978 study, suggested Equendito was a Canarise village, but more recent research by Panamerican Consultants (2003) refutes that finding, citing it only as a place name. Because of the level of disturbance on Barren Island, intact archeological remains are most likely scarce.
- 14 Black, 12-13; *Encyclopedia of New York State*, s. v. "Brooklyn."
- 15 *Encyclopedia of New York State*, s. v. "Brooklyn."
- 16 Quoted in Black, 12.
- 17 Black, 13.
- 18 Quoted in Black, 13.
- 19 Benjamin F. Thompson, *History of Long Island: An Account of the Discovery and Settlement, With Other Important and Interesting Matters to the Present Time* (New York: E. French, 1839), 449.
- 20 Black, 14, 65. The 1840 census reflected division of the eastern section into the Town of New Lots.
- 21 *Encyclopedia of New York State*, s. v. "Brooklyn."
- 22 *Encyclopedia of New York State*, s. v. "Brooklyn."
- 23 Native American Genealogy, "The Canarsee," Peconic Homestead website; Black, 91. The amount of acreage at the time of this 1664 sale is not known.
- 24 Thompson, 447.
- 25 Wuebber and Morin, 7.
- 26 Black, 17.
- 27 Black, 17.
- 28 Although accuracy of early maps is questionable, the c.1700 map shown below indicates a much larger Barren Island. New York Public Library Digital Gallery, annotated by SUNY ESF.



29 Black, 18; Wuebber and Morin, 7-8.

30 Black, 19.

31 D. H. Burr, *Map of New York City and Vicinity* (New York: J. Disturnell, 1839).

32 E. & G. W. Blunt, *New York Harbor and Entrance*, c.1844, New York Public Library Digital Gallery, digital ID 253225.

33 Thompson, cited in "Wreck of the Bristol," <http://longislandgenealogy.com/bristol.html>.

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35 "Barren Island," *Brooklyn Union*, 4 September 1876.

36 "To Use New-York Garbage, The Plant on Barren Island Will Soon Be Finished," *New York Times*, 27 September 1896, 14.

37 Black, 18 and Figure 4; "\$1,500,000 Fire Loss on Barren Island," *New York Times*, 21 May 1906, 1. Black provides a complete account of the industries on Barren Island.

38 Black, 35.

39 Black, 36.

40 *Map of New York City, Brooklyn, and Vicinity Showing Surface & Elevated Railroads in Operation and Proposed* (New York: G. W. & C. B. Colton & Co., 1885).

41 "To Use New-York Garbage."

42 "To Use New-York Garbage."

43 "\$1,500,000 Fire Loss on Barren Island," *New York Times*, 21 May 1906, 1.

44 "\$1,500,000 Fire Loss on Barren Island;" "2 U.S. Ships Afire at Barren Island," *New York Times*, 21 June 1921, 2.

45 "\$1,500,000 Fire Loss on Barren Island."

46 "Barren Island is Fading," *New York Times*, 19 February 1939, *Travel & Recreation*, 141.

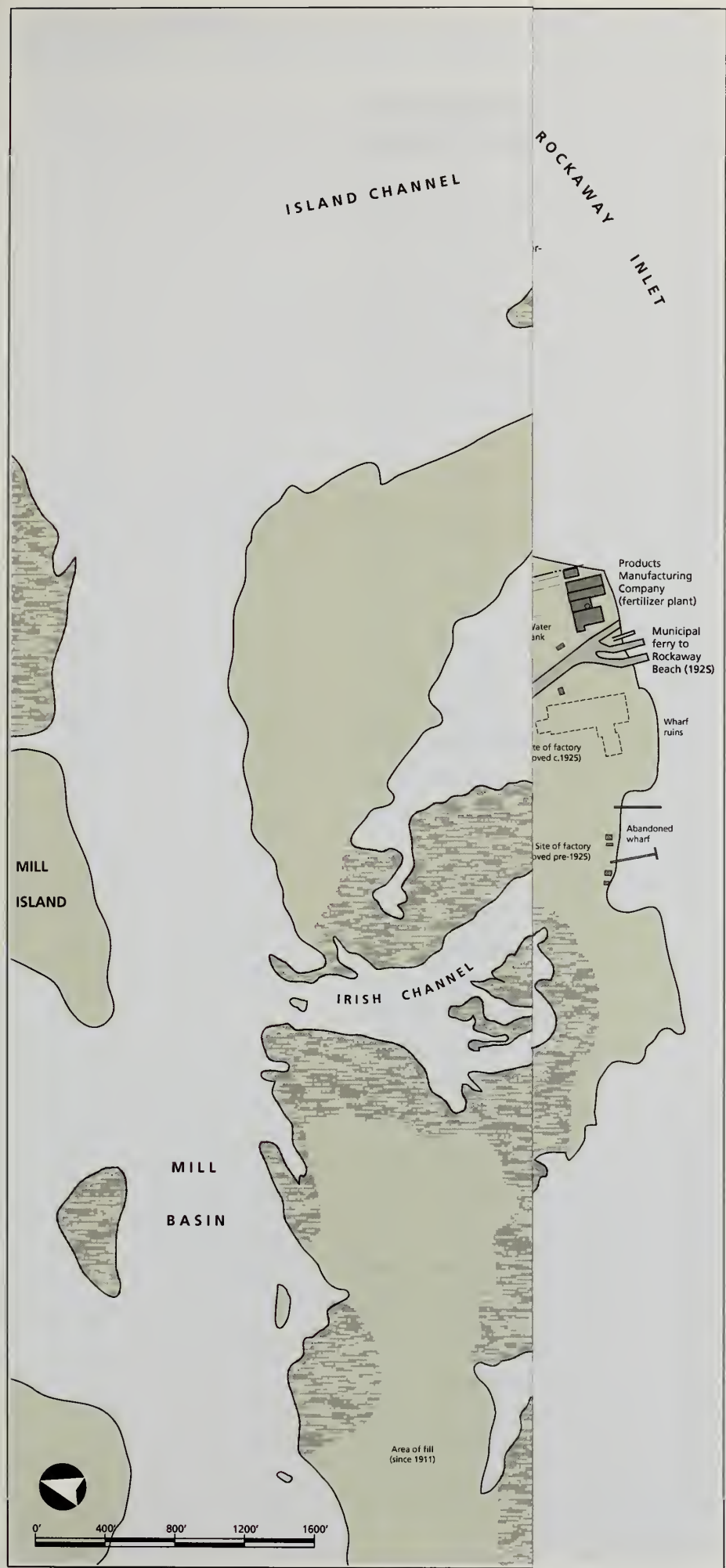
47 Black, 36, 40. Barren Island population figures for 1890 were not separated out from the rest of Flatlands.

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50 "Fatal Explosion on Barren Island," *New York Times*, 1 May 1910, 4.

- 51 U.S. Coast and Geodetic Survey, Chart 542, 1926; Sanborn Fire Insurance Company map, Brooklyn, volume 19, sheet 82, 1930.
- 52 "Barren Island School Shuts Doors June 30."
- 53 U.S. Coast and Geodetic Survey, Chart 542, 1926; Sanborn Fire Insurance Company map, Brooklyn, volume 19, sheet 82, 1930.
- 54 Elizabeth Royte, "Less than Barren," *P.O.V.'s Borders.Environment Talk*, 5 March 2004, <http://www.pbs.org/pov/borders/2004/talk/er.html>.
- 55 Black, 77-79.
- 56 "Barren Island is Fading."
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- 58 "2 U.S. Ships Afire at Barren Island," *New York Times*, 21 June 1921, 3.
- 59 Black, 41.
- 60 "Rockaway Ferry Opened by Hylan," *New York Times*, 18 October 1925, 41.
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- 63 "Barren Island is Fading."
- 64 Wuebber and Morin, 17.



Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

Barren Island and Tidal Estuary, 1928



National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

1. Jamaica Bay Improvement Commission survey, 1909
2. U. S. Coast and Geodetic Survey, Chart 542, 1911, 1926, 1934
3. Sanborn Fire Insurance map, Brooklyn, Vol. 19, sheet 82, 1930
4. Fairfield Aerial Camera photograph, 1924

DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

LEGEND

	Property boundary
	Building or structure
	Unimproved road or walk
	Improved road or walk
	Fence
	Woods, specimen trees
	Upland/fill, low scrub
	Marsh
	Open water
	Site of removed feature
	Date feature constructed, if known

NOTES

1. All features shown in approximate scale and location.
2. Detailed documentation on vegetation, walks, and small-scale features not found.
3. Most buildings are dwellings, except where noted.
4. Plan shows conditions in 1928 and not prior changes except where noted.

Drawing 1.1

Gateway National Recreation Area
Brooklyn, New York

NATIONAL
PARK
SERVICE

OLMSTED
CENTER

for LANDSCAPE PRESERVATION

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

1. Jamaica Bay Improvement Commission survey, 1909
2. U. S. Coast and Geodetic Survey, Chart S42, 1911, 1926, 1934
3. Sanborn Fire Insurance map, Brooklyn, Vol. 19, sheet 82, 1930
4. Fairfield Aerial Camera photograph, 1924

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

	Property boundary
	Building or structure
	Unimproved road or walk
	Improved road or walk
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4. Plan shows conditions in 1928 and not prior changes except where noted.



FLOYD BENNETT FIELD: NEW YORK CITY MUNICIPAL AIRPORT, 1928-1941

In 1928, work began on transformation of the waterways, marshes, and fill to the north of Barren Island into New York City's first municipal airport, Floyd Bennett Field. Completed within three years and dedicated in May 1931, the airport represented one of the city's major accomplishments in its plans to transform Jamaica Bay into a major port. With the hangars and administration building lining the recently built Flatbush Avenue extension, the field extended west to Jamaica Bay where two runways and a seaplane base were built on engineered fill. Through another three phases of construction during this period, the city expanded the airport with new runways and additional buildings through both city and federal funding. Never a big commercial success, the municipal airport nonetheless was the site of numerous record-breaking flights and also served as a base of military operations. Beginning in 1931, the U.S. Navy occupied some of the airport hangars for its Naval Reserve Aviation Base Brooklyn, and in 1940 developed a separate facility, the Naval Aviation Patrol Base, on land leased from the city along Jamaica Bay. This facility adjoined the U.S. Coast Guard Air Station Brooklyn that was built four years earlier on another leased parcel. The municipal airport, Naval Aviation Patrol Base, and the Coast Guard Air Station all made use of the waters of Jamaica Bay as runways for seaplanes, allowing for a significant expansion of the airport's capacity.

Immediately south of the airport, remnants of the Barren Island community persisted through the end of this period. By the mid-1930s, the City of New York had cleared all buildings from the western two-thirds of the island in preparation for its redevelopment as part of Brooklyn Marine Park, which would be newly linked to a larger system of parklands around Jamaica Bay and Rockaway Beach through completion of the Marine Parkway Bridge in 1937. The eastern third of Barren Island, which remained privately owned, retained some houses and a church. This last vestige of the community would also soon succumb not to park development but rather to the Navy's expansion of Floyd Bennett Field that would begin in 1941 during the lead-up to World War II.

EARLY PORT, PARK, & MILITARY DEVELOPMENT NEAR BARREN ISLAND

While construction of Floyd Bennett Field began in 1928, its origins trace back to earlier efforts to develop the surrounding area for port, park, and military uses. For decades prior to construction of the airport, plans had been underway to transform Jamaica Bay into a new commercial port for New York City. In 1886, the U.S. Engineering Department made initial plans for deepening Rockaway Inlet as a means to enhance port development in the bay, but the plan was abandoned due to lack of existing commerce. In 1906, the commercial statistics of the bay,

including the Barren Island industries, were presented to Congress as part of an effort to revive the 1886 federal plan. Over the two decades following this effort, arguments for the new Jamaica Bay port and industrial center were bolstered by the heady economic growth of New York City and resulting congestion in New York Harbor, the city's main port along the Hudson River.¹ The 1905 census valued New York's manufacturing business at more than \$1.5 billion, an increase of over one billion dollars from the year 1900. Proponents of the Jamaica Bay project also cited plans for designating the proposed port as the Atlantic terminal of the New York State Barge Canal system that was planned to connect the Hudson River with the Great Lakes along the lines of the old Erie Canal and its branch lines. Begun in 1906, it was anticipated that the barge canal system would bring New York City a dramatic increase in business and commerce.²

New York City officials saw the port project as a way to turn Jamaica Bay from perceived wasteland into a "great world harbor," as reported by the *New York Times* in 1910 in an article complete with a future birds-eye view of the project as fully built (fig. 1.24).³ The plan was to create a sheltered harbor with an area of over twenty-five square miles of wharves by dredging out the bay and using the material to fill surrounding marshes, creating 4,200 acres of developable land. The proposal, estimated to cost over one hundred million dollars, included building a series of docks with warehouses along two interior islands and the bay shoreline. Railroad tracks would be built on the docks so that cargo could be loaded and unloaded quickly and efficiently. Beyond the waterfront would be factories and further inland, residential neighborhoods for the workers. A railroad terminal was also planned for the site, occupying an area the size of 600 city lots, as well as

a canal extending north to the Long Island Sound.⁴

Figure 1.24: Rendering of proposed Jamaica Bay harbor, view looking northwest with Manhattan in the background and Jamaica Bay in the foreground. Barren Island is at the lower left. ("Jamaica Bay to be a Great World Harbor," *New York Times*, Sunday Magazine, 13 March 1910, annotated by SUNY-ESF.)



The project began in 1911 following the federal Secretary of War's approval of bulkhead and pierhead lines throughout Jamaica Bay.⁵ The following year, the New York City Department of Docks began dredging the main inlet and using the material to fill the marshes. Near Barren Island, this work included creating the extensive area of fill between Jamaica Bay and Little Bay, as well as areas along Mill Basin to the north. By 1918, the filling was sufficiently complete for the city to begin implementing plans for fourteen piers extending into Island Channel between

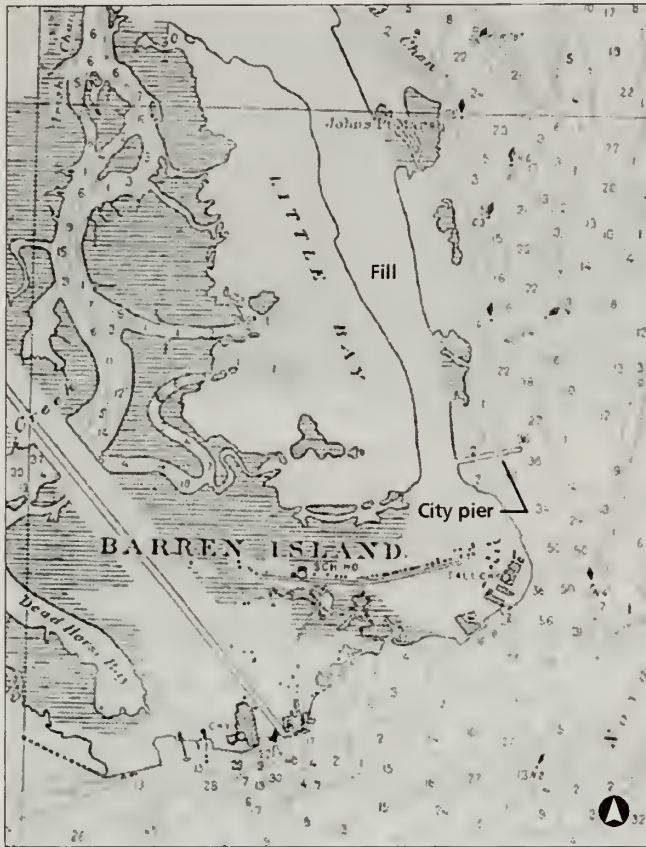


Figure 1.25: Coast Guard survey made in 1926 showing area of fill along Little Bay and city pier constructed as part of proposed Jamaica Bay port development that began in 1911. (Detail, U.S. Coast and Geodetic Survey, "East Coast, New York, Jamaica Bay and Rockaway Inlet," Chart #542, annotated by SUNY ESF.)

Barren Island and Mill Basin. Each pier was to be 1,000 feet long and 200 feet wide, with 300 feet separating them. The city constructed a pier just north of Barren Island as part of the first 1,000 foot-long pier, to be used for city sanitation scows to unload their refuse (fig. 1.25). No further work was done on the system of piers following World War I, and the original plans for the port were largely abandoned due mainly to legal and financial limitations, loss of the barge canal terminal designation, and questions about the feasibility of the project from an engineering standpoint.⁶ Despite this, the Department of Docks continued with dredging and maintaining the main ship channel through Jamaica Bay, including Island Channel along the east side of Barren Island.⁷

While the city kept active its plans for commercial development of Jamaica Bay despite the lack of progress, others in city government began to envision a different future through development of public parklands, building on the existing resort areas on Rockaway

Beach. Already by 1922, plans were underway by the city for establishing what would become Jacob Riis Park on Rockaway Beach across from Barren Island.⁸ In 1924, the city accepted a private donation of 150 acres along Flatbush Avenue near the Brooklyn shoreline that would form the core of the proposed Brooklyn Marine Park. Additional park development in the area began to gain considerable political support beginning in the mid-1920s with the backing of Robert Moses, the future city parks commissioner who had recently drafted a plan for expanding state parks in New York. Moses envisioned an interconnected system of parks and parkways across Long Island and New York City, a plan that would be implemented in large part during the late 1920s and 1930s. In the vicinity of Barren Island, plans included a circumferential parkway along the Brooklyn and Queens shoreline, and extension of Flatbush Avenue across a bridge spanning Rockaway Inlet linking Brooklyn Marine Park and Jacob Riis Park.⁹

Despite the growing political backing for park development, the U.S. military continued to maintain its strategic interest in the west end of Jamaica Bay. Across the Rockaway Inlet from Barren Island was Fort Tilden, an Army post with four twelve-inch mortars established in 1917 as part of the coastal defenses of New York Harbor. Adjacent to Fort Tilden was the U.S. Coast Guard Station Rockaway, built in c.1912, and the Naval Air Station Rockaway, commissioned in 1917 as one of the first such facilities in the country and active until 1930. At



Figure 1.26: Naval Air Station Rockaway looking southwest toward the Atlantic Ocean with the Coast Guard Station Rockaway and Fort Tilden in the background, c.1918. The air station was located directly across Rockaway Inlet from Barren Island. (Copyright Queens Public Library, Long Island Division.)

its height, the Naval Air Station included over eighty buildings and was stationed with as many as 1,200 men. From here, the Navy operated a flotilla of seaplanes, then known as flying boats, as well as dirigibles and balloons.¹⁰ (fig. 1.26, see also fig. 1.14). With its access to wide open water suitable for landing aircraft, good weather, relative lack of surrounding development, and site adjoining Army and Coast Guard installations, the Naval Air Station

Rockaway portended the aviation and military future of Barren Island and its adjoining marshlands directly across Rockaway Inlet.

BARREN ISLAND, SITE FOR NEW YORK'S MUNICIPAL AIRPORT

When the city announced its plans for the Jamaica Bay port in 1910, aviation was not yet considered a viable means of transportation. Flight prior to World War I was largely the realm of the military and private enthusiasts, with private air fields numbering just 115 across the country by 1918.¹¹ World War I proved a time of great advances in aviation, as residents of Barren Island and the Rockaway Peninsula were well aware from the war-time flights out of the Rockaway Naval Air Station. The war had proven the capability of flight and witnessed the development of larger and more powerful aircraft capable of carrying cargo and passengers. In the decade following the war, planes became widely accepted for commercial transport, and increasingly for passenger travel.¹² The growth of commercial aviation during the 1920s was encouraged by the federal government, notably through the Post Office Department. The Post Office had launched one of the earliest commercial uses of aviation with its experimental airmail service begun in 1911. By the mid-1920s, the Post Office had become a major force behind development of commercial aviation and airport facilities through its airmail business, offering exclusive contracts to municipal airports in each metropolitan district. For most municipal airports, securing the airmail contract was the key to financial success because it not only provided a major source of revenue for the airport, but also attracted airline companies who could provide commercial and passenger airline service.¹³

The country's acknowledged first municipal airport in Atlantic City, New Jersey opened in 1919 under private ownership and was taken over by the municipality in 1922. The establishment of the airport was largely a result of the prospect of airmail business as well as need to provide passenger service to tourists. Initially named Bader Field, the term "airport" was purportedly coined for this facility in

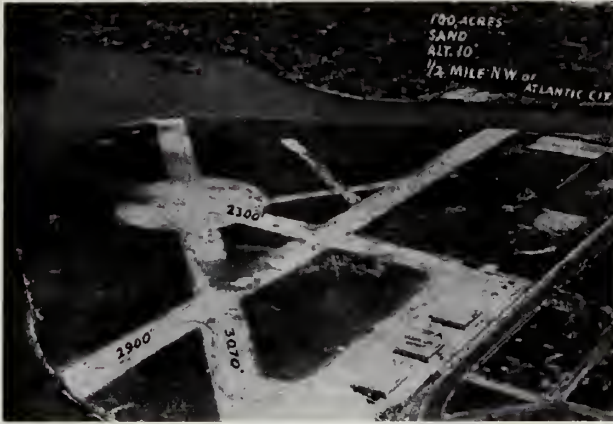


Figure 1.27: View of Atlantic City Airport, established in 1919 purportedly as the country's first municipal airport, photographed 1933. Note what appear to be the original two perpendicular runways and hangars aligned with the public highway at right. The diagonal runway was probably a later addition. (Airport Directory Company, *Airports and Established Landing Fields in the United States*, 1933 Edition, s.v. Atlantic City.)

1919 by a local reporter to refer to seaplanes that provided limousine service between Atlantic City and New York City.¹⁴ The airport was laid out with the hangars and administration building (passenger terminal), aligned with the public highway, and the runways extending to the rear (fig. 1.27). There were apparently two perpendicular runways, surfaced in gravel.¹⁵ The first comprehensive plan for a municipal airport, providing a unified design for runways, hangars, and a passenger terminal, is believed to be the one for Cleveland's Hopkins Airport, dedicated in July 1925, although the plan was not fully executed until well after the airport opened.¹⁶

While Atlantic City and Cleveland both had operating municipal airports by 1925, New York City officials by this time were just beginning the planning process. As in many metropolitan regions, there were a large number of small private airfields serving the still limited amount of commercial and passenger air traffic. Small grass strips such as the Barren Island Airport established in 1927 served air enthusiasts, while larger private fields, such as Flushing Airport in northern Queens east of today's LaGuardia Airport, also serviced fledgling commercial service. Opened in 1927 as Speed's Airport, Flushing Airport became New York's busiest airport for a time and also served also as a base for a flight school. The airfield featured clay runways and a line of hangars paralleling the public road—a typical arrangement for the time—with parking off the main road providing quick access to the planes.¹⁷ (fig. 1.28). Without a city-owned municipal airport, Flushing Airport was able to bill itself as “New York City Airport” as painted on the roof of one of its hangars.



The origins of New York City's efforts to establish its own municipal airport began in 1925 when many were realizing the inadequacy of the private fields and competition was emerging for building a regional commercial airport. That year, the city began an official search for a suitable site for its

Figure 1.28: Flushing Airport, a small airfield established in 1928 in northern Queens, photographed c.1932. This was an example of the private commercial airfields that were common in the New York City region prior to establishment of large, regional municipal airports. Note alignment of the hangars along the public road. The letters on the roof of the hangar in the foreground read “New York City Airport.” (Copyright Cradle of Aviation Museum, Garden City, New York.)

municipal airport.¹⁸ However, city officials took no action until 1927, when the Port Authority of New York became involved in the efforts and began to develop detailed plans for siting the airport.¹⁹ The need for such an airport was not only due to the city's hopes of securing the airmail contract, but also to increasing public pressure that New York would become the country's base for trans-Atlantic flights, following Charles Lindbergh's landmark transatlantic flight to Paris from Roosevelt Field, Long Island in May 1927. Perhaps most importantly, nearby Newark, New Jersey, was making great progress by 1927 on building its own municipal airport. Given its proximity to Manhattan with the newly opened Holland Tunnel, the Newark airport had the potential to serve as the regional municipal airport and secure the exclusive airmail contract. On October 1, 1928, Newark Municipal Airport officially opened.²⁰

In August 1927 while construction of Newark airport was underway, Secretary of the U.S. Department of Commerce, Herbert Hoover, established a fact-finding committee to recommend suitable sites for a municipal airport to handle the exclusive airmail contract in the New York City region. The committee consisted of twenty-three New York and New Jersey officials, commercial and industrial aircraft representatives, and the famous transatlantic aviator Clarence D. Chamberlin, who served as the aeronautical advisor.²¹ On November 29, 1927, the committee released its report recommending six sites, two in New Jersey (including Newark Municipal Airport) and four in New York.²² New York City officials quickly began investigating the recommended sites within the city limits. The fact-finding committee had recommended a site near Queens Village known as Juniper Swamp as a prime location. Because this site was privately owned and therefore required a large investment simply for acquisition, city officials moved down the list to a site north of Barren Island that was already owned by the city under the jurisdiction of the Department of Docks. Although listed as a secondary site and requiring substantial filling of the watery spot, Clarence Chamberlin advised the city that Barren Island could indeed make a fine airport.²³ By 1928, however, Newark Airport was complete and as the only operational municipal airport in the region, it was awarded the exclusive contract for airmail service. Despite this, New York City officials continued with their plans for a municipal airport, confident they could secure the airmail contract from Newark once their airport was complete.²⁴

Even without the exclusive airmail contract, New York City officials had good reason to proceed with building their own municipal airport. Although the 1910 proposal for the Jamaica Bay port had not been realized, the city still hoped to increase commercial development in the area despite the new interest in park development. By 1927, millions of dollars in city and federal funds had been spent on improving navigation in the bay, and many public officials felt if the

airport were located at Barren Island, the city could still achieve its goal of turning Jamaica Bay into a thriving commercial and industrial hub. While city ownership was one of the key factors favoring the Barren Island site, there were also several other important benefits. Clarence Chamberlin had recommended that Barren Island could make a fine airport because of its wide, open spaces, and most importantly, its access to water for use as seaplane runways.²⁵ Chamberlin also cited the favorable weather conditions, with a low record of fog, haze, or storms. While remote from Manhattan and downtown Brooklyn and lacking a train connection, the Barren Island location was easily accessible by automobile and bus along Flatbush Avenue, as well as having potential for ferry and boat access. Given all these conditions, city officials considered Barren Island the optimal site. On February 2, 1928, the Board of Estimate and Apportionment approved a rectangular 380-acre site north of Barren Island for the city's first municipal airport.²⁶ (fig. 1.29).

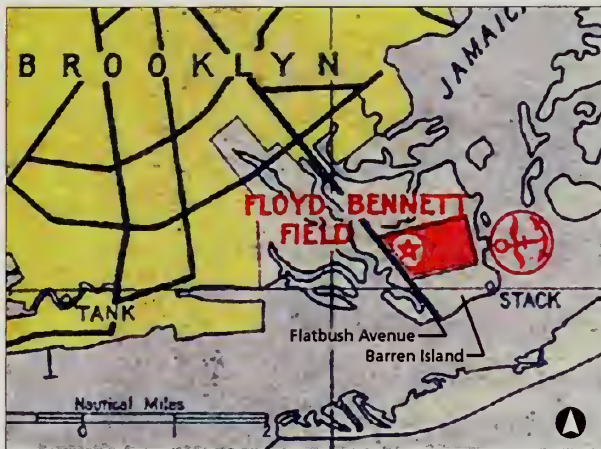


Figure 1.29: Site chosen for New York's first municipal airport, Floyd Bennett Field, north of Barren Island. (Detail, U.S. Navy Aeronautical Chart, 1934, annotated by SUNY ESF.)

By October of 1928, the city had decided to name the new airport Floyd Bennett Field in honor of the recently deceased hero of American aviation who died on April 25, 1928 in a rescue attempt for a failed trans-Atlantic crossing. Floyd Bennett was a Brooklyn resident, Navy pilot, and local aviation hero most famous for the Distinguished Service Medal and the Congressional Medal of Honor he received for his arctic flights with Commander Richard E. Byrd in 1925-26.²⁷

At the time city officials chose the site for Floyd Bennett Field in February 1928, the community to its immediate south on Barren Island was still inhabited, although declining. All of the industries had closed except for the Products Manufacturing Company, which operated in its long-time plant at the foot of Flatbush Avenue. The abandoned hulk of the New York Sanitary Utilization Company plant with its tall chimney stack loomed over the eastern tip of the island. While the Barren Island community would not be physically impacted by construction of the neighboring airport, most residents probably realized that the tremendous changes in the area together with the demise of their industrial base left them little hope for maintaining their community. By 1930, only 400 residents remained, down from the 1,500 at the height of the island's prosperity over a decade earlier.²⁸ By 1931, the City had acquired a fifty-eight acre tract on Barren Island bordering Flatbush Avenue that together with an adjoining 110-acre tract owned by Kings County would be redeveloped into the city's proposed Brooklyn Marine Park.²⁹ These two parcels encompassed two-thirds of Main Street and the entire southwest cluster. At or soon after the city acquired the property, the Products Manufacturing Company closed and the plant was demolished.



Figure 1.30: City zoning map showing park and parkway system in the vicinity of Floyd Bennett Field, 1938. The plan shows all of Barren Island as part of Marine Park, although by this date the eastern tip remained in private ownership. In stark contrast to the 1910 Jamaica Bay port plan, the only area zoned industrial is around Mill Basin, shown in black. The stippled area along the Shore Parkway was zoned residential. (Detail, City of New York, Jamaica Bay Zoning Map, 1938, image 805907, New York Public Library.)

in 1934, completed to Flatbush Avenue by c.1937, and was dedicated in 1940 upon completion of the bridge over Mill Basin.³⁰ As with all parkways in New York, the Shore Parkway was a limited-access highway open to non-commercial vehicles only, thus providing limited use to commercial uses at Floyd Bennett Field.

As work was underway on the Shore Parkway, the city was implementing plans for expanding the parks near Floyd Bennett Field. In 1934, state legislation backed by Robert Moses was passed establishing a commission to oversee the \$10,000,000 improvement of Brooklyn Marine Park and Jacob Riis Park, and to connect them with a parkway including a bridge spanning Rockaway Inlet. Moses envisioned the project as the city counterpart to Jones Beach, the famous state park farther east on Long Island.³¹ At Jacob Riis Park, the city built an elaborate bath house and boardwalk along the ocean beach, partly on the site of the old Naval Air Station Rockaway that was closed in 1930. At Brooklyn Marine Park, the city greatly expanded the acreage of the original 150-acre core of the park along Flatbush Avenue on the Brooklyn mainland that had been donated to the city in 1924. By 1937, the city had incorporated into the park all of the land along the west side of Flatbush Avenue in addition to the property on Barren Island, totaling 1,822 acres (see fig. 1.30).³²

Moses's proposed parkway and bridge linking Brooklyn Marine Park and Jacob Riis Park with Shore Parkway entailed improvement and extension of Flatbush Avenue, leading to the final end of Barren Island's isolation. Work on Flatbush

The development of Brooklyn Marine Park was part of the larger park and parkway plan for the Jamaica Bay area developed by City Parks Commissioner Robert Moses. During the 1930s, the city officially replaced earlier plans for a major commercial port with plans for park development; the only area zoned for industrial use was at Mill Basin (fig. 1.30). The city's plan would largely surround Floyd Bennett Field with parks and parkways. North of the airport site, the Circumferential Parkway, later renamed Shore Parkway, was conceived in 1930 as part of an arterial highway known as the Belt System that would link Manhattan, Brooklyn, and Queens. The Shore Parkway was begun



Figure 1.31: View of the newly completed Marine Parkway Bridge looking north with Floyd Bennett Field and the remains of Barren Island in the background, 1937. (Image 730897F, copyright New York Public Library.)

Avenue and the bridge began in c.1936 under the auspices of the Marine Parkway Authority and the 4,000-foot long steel-truss lift bridge was opened for traffic in July 1937 (fig. 1.31).³³ Plans also called for the improvement of Flatbush Avenue, which was renamed Marine Parkway south of Avenue U, with a tree-lined median, but this work was not completed until several years after the bridge was built.³⁴

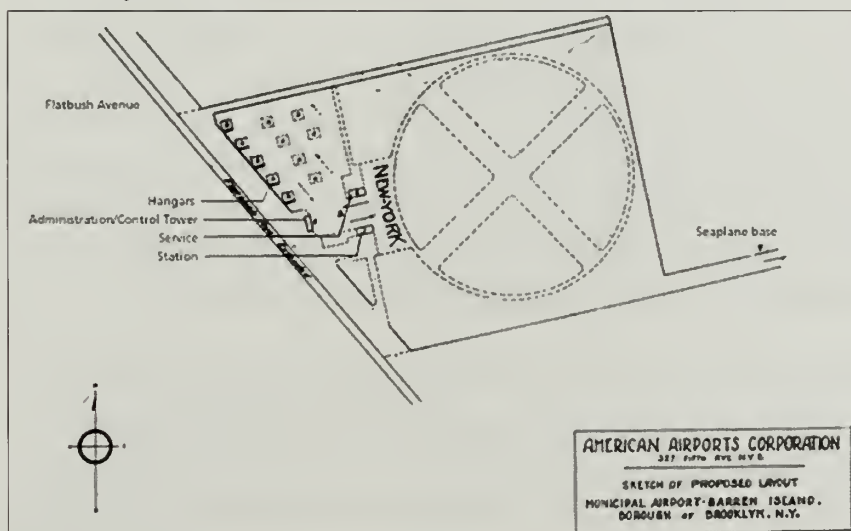
The city began to implement its plans for the portion of Brooklyn Marine Park on Barren Island in 1936, as work was beginning on the Marine Park Bridge. That year, the city began to survey the site and design the landscape. Plans included a golf course east of Marine Parkway and a yacht basin to the west at Dead Horse Bay. In preparation for the park development, Barren Island residents on city property received a notice in spring 1936 to vacate within fourteen days, and after a two-month extension, city crews began demolition work on all buildings. Twenty-five families remained on the approximately ninety acres of private property at the eastern tip of the island belonging to Thomas F. White and his associated New York Sanitary Utilization Company. This land, according to city plans, was also to become part of Brooklyn Marine Park.³⁵

Figure 1.32: Plan of a rejected layout for Floyd Bennett Field by American Airports Corporation of New York City, probably dating to the fall of 1927. (National Archives, reproduced from Porter Blakemore and Dana C. Linck, "Historic Structures Report...for Floyd Bennett Field, Volume 1," 1981, annotated by SUNY ESF.)

PLANS FOR FLOYD BENNETT FIELD

Design concepts for Floyd Bennett Field probably began during the fall of 1927 while the Hoover fact-finding committee was doing its work, well before city officials had given final approval to the Barren Island site on February 2, 1928. The city initially solicited designs from outside consultants including the American

Airports Corporation of New York City, which produced a plan in c.1927 for the still unnamed airport entitled "Sketch of Proposed Layout, Municipal Airport---Barren Island, Borough of Brooklyn, N.Y." The company's plan featured a circular layout with two runways in an 'X' formation, eleven hangars along Flatbush Avenue, and a seaplane base on Jamaica Bay (fig. 1.32).



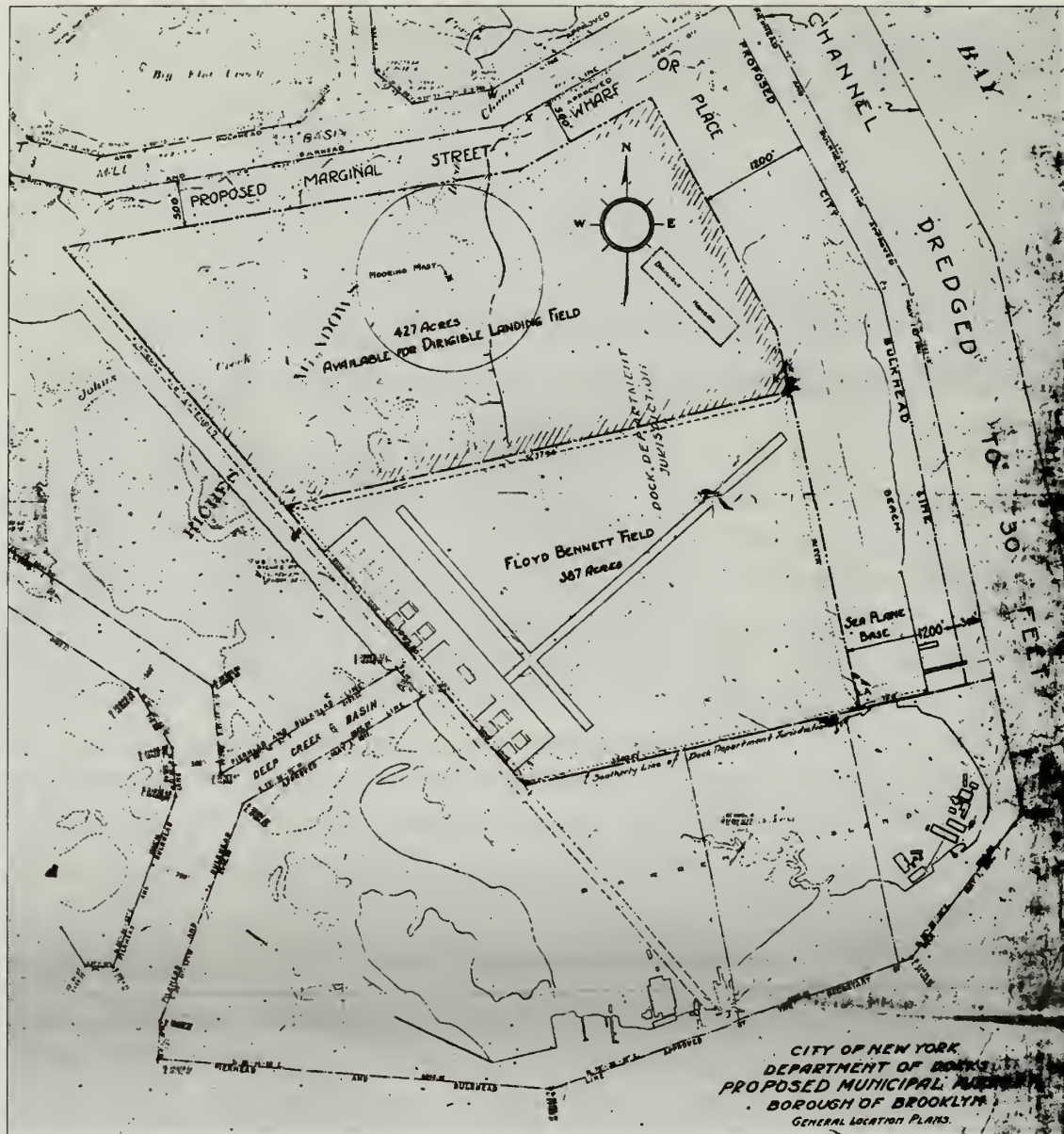


Figure 1.33: Detail of the earliest Department of Docks plan for Floyd Bennett Field dated January 30, 1928 with later annotations. The area north of the airfield was designated as a potential dirigible landing field. (City of New York municipal archives, reproduced from Porter Blakemore and Dana Linck, "Historic Structure Report... for Floyd Bennett Field," 1981.)

By January 1928, the Department of Docks had shifted to an apparent in-house design for the Barren Island airport, with the help of aviator Clarence Chamberlin who had assisted with the site selection and now held the post of "Consulting Aeronautical Engineer." Although it is not certain who designed the overall airport layout, final plans were developed within the department's Bureau of Engineering, Division of Port Planning. Drawings were submitted by Division Engineer William Lansing, and approved by Chief Engineer Thomas F. Keller and Department Commissioner Michael Cosgrove in addition to Clarence Chamberlin.³⁶

On January 30, 1928, the Department of Docks finalized its conceptual plan for the municipal airport at Barren Island, entitled "Proposed Municipal Airport, Borough of Brooklyn, General Location Plans." (fig. 1.33). The plan for the 387-acre rectangular site featured two runways, hangars lining Flatbush Avenue, and

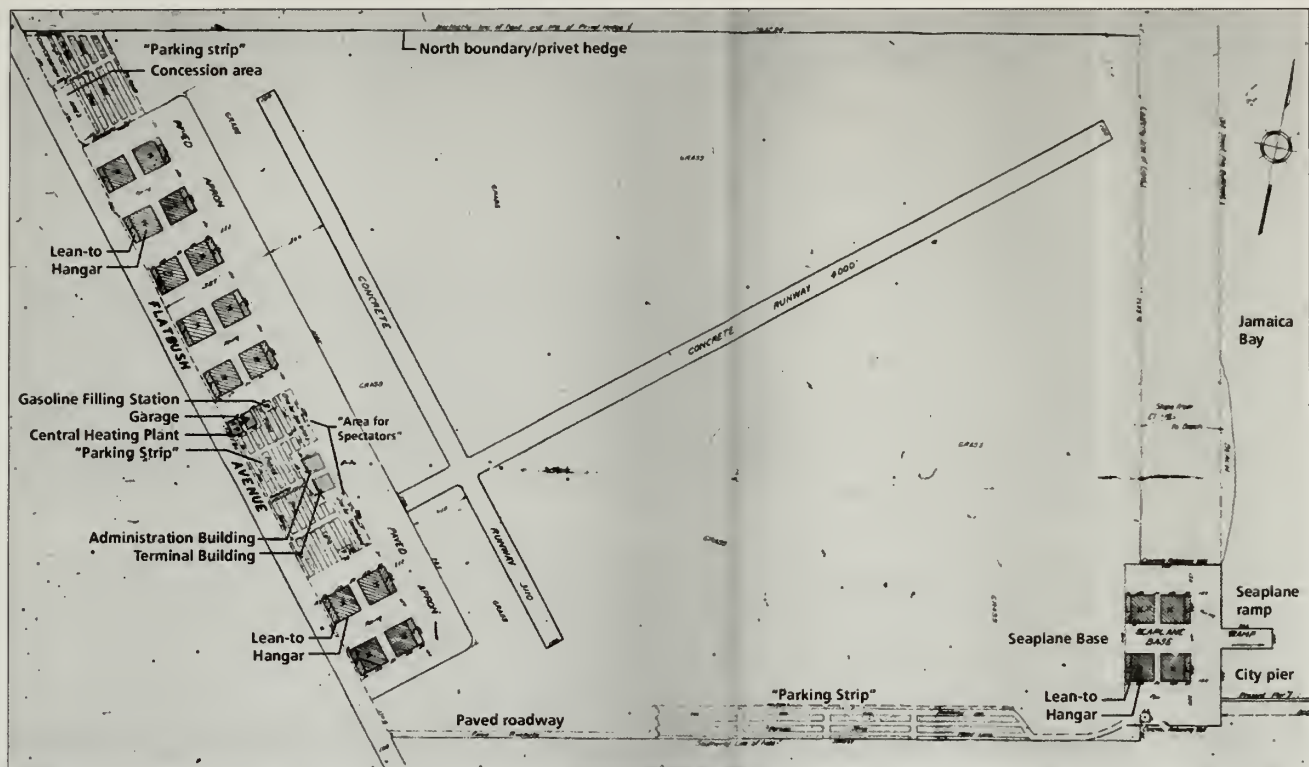


Figure 1.34: Detail of the original Department of Docks master plan for Floyd Bennett Field entitled "Layout of Municipal Airport, Floyd Bennett Field" circa fall 1928. (City of New York municipal archives, reproduced from Porter Blakemore and Dana Linck, "Historic Structure Report...for Floyd Bennett Field," 1981, annotated by SUNY ESF.)

a seaplane base on Jamaica Bay. A future expansion into the area north of the field was shown on the plan although it may have been a later annotation. This 427-acre area was designated as a dirigible landing field. While the city had not yet approved the Barren Island location, the Department of Docks most likely developed the plan to convince city officials about the feasibility of the site.

From this conceptual plan, the Department of Dock's produced a more detailed design by the fall of 1928, entitled "Layout of Municipal Airport, Floyd Bennett Field." (fig. 1.34). The design, which would serve as the master plan for the airport, followed the federal Air Commerce Act of 1926, which promoted standards and guidelines for commercial airlines and airport design as part of the federal government's regulation of interstate commerce.³⁷ The city developed specifications for the airport based on the 'A1A' rating, the highest standards set by the U.S. Department of Commerce. The plan featured two perpendicular concrete runways in a 'T' formation, one measuring 3,110 and the other 4,000 feet long, set within a grass field protected by a sand-trap privet hedge. The primary buildings and parking areas were sited along Flatbush Avenue within a paved apron and included a two-story administration building and a two-story terminal building, a garage, gasoline filling station, central heating plant, fourteen square hangars with attached lean-tos, and a concession area at the north end of the complex. These buildings were set back uniformly approximately 500 feet from the edge of the runway to provide a flight-path clear zone. A separate seaplane base was proposed on Jamaica Bay with its own set of four hangars and a seaplane ramp, incorporating the pre-existing city pier built in c.1918. The seaplane base

was to be accessed from a paved road along the south boundary with its own parking area. The parking areas were designed as paved roadways with unsurfaced parking spaces.³⁸

From the beginning, the city realized that the new airport could not succeed based solely on commercial aviation, and made plans to lease hangars to other public agencies. Likely candidates included the Naval Reserve Air Service (the Rockaway air station was soon to close), the National Guard, the city police department, and the city Board of Education for the purpose of adding aeronautics to the public school curriculum.³⁹

Construction of Floyd Bennett Field began in May 1928 before plans were finalized, and by the spring of 1930 the initial phase of construction was substantially complete. Over the course of the following decade, the airport would undergo additional refinement, expansion, and development in four distinct phases of construction. In total, construction costs for the airport amounted to nearly \$10,500,00.⁴⁰ The first phase, from 1928 to 1931, included filling and grading of the site, and construction of the primary facilities, including runways, aprons, hangars, and an administration building-passenger terminal. The second phase, from 1932 to 1933, included construction of the seaplane base along Jamaica Bay, and addition of landing guidance systems, maintenance buildings, and a sewage disposal facility. A substantial expansion of the airport occurred during the third phase between 1934 and 1938, made possible through assistance from federal work-relief programs and corresponding with the city's development of Brooklyn Marine Park and removal of most of the Barren Island community. Work included addition of two runways, enlargement of the hangars, improvement of the airport entrance landscape, new parking lots, two new runways, and construction of a Coast Guard air station along Jamaica Bay. During the fourth construction phase between 1939 and 1941, the Navy expanded its presence at the airport in the run-up to World War II through construction of a reserve base south of Hangar Row and development of a seaplane patrol base along Jamaica Bay.

BUILDING OF FLOYD BENNETT FIELD: FIRST CONSTRUCTION PHASE, 1928-1931

Before construction of the primary facilities could begin, substantial work was necessary to transform the watery site into a dry, level terrace suitable for an airport. The first construction contract, awarded in May 1928, was for hydraulic filling and grading of the rectangular parcel's 387 acres between Jamaica Bay and Flatbush Avenue, creating a wide expanse of sandy upland to the north of Barren Island that filled in remains of Little Bay and Deep Creek (fig. 1.35). Hydraulic fill was deposited on the site by pumping dredge material from Mill Basin and Jamaica



Figure 1.35 (top): Aerial photograph looking north over Barren Island showing extensive area of sand fill (white area) being created for Floyd Bennett Field, 1929. The defunct New York Sanitary Utilization Company plant is in the right foreground. (Uncatalogued maintenance file photograph, Floyd Bennett Field, Gateway National Recreation Area.)

Figure 1.36 (bottom): View of the steel bulkhead holding the airport fill (left background), looking north from the bathing beach on the east side of Barren Island, 1931. The cranes in the background are probably working on construction of the airport's seaplane base completed under the second phase of construction. (Digital image 731877F, copyright New York Public Library.)

Bay. The large amount of fill required the addition of steel bulkheads along the boundaries of much of the site to meet the pre-existing grade which varied from sea level along Jamaica Bay to sixteen feet above mean low tide at Flatbush Avenue. At the bathing beach on the east shore of Barren Island, the change in grade resulted in an exposed bulkhead upwards of fourteen feet high (fig. 1.36). By mid-1929 after about one year of work, the filling and grading operations were complete.⁴¹

Construction of the Airfield

In January 1929 prior to completion of filling and grading, the Department of Docks awarded an extensive contract encompassing a range of projects related to preparation of the field and construction of the runways (fig. 1.37). This contract was completed by late 1929. To facilitate transport of construction materials to the site by boat, a "T"-shaped wooden pier was constructed at the head of Deep Creek

Basin on the west side of Flatbush Avenue.⁴² This pier, opposite from the airport terminal building, was later used as a ferry terminal once major construction had been completed.

Once the sandy fill was dredged onto the airport site, contractors began work on grading and building a stable surface for the airfield. This included laying down a four-inch thick layer of clay subsoil and three-inch layer of topsoil that provided a growing base for turf. Plans called for creating eighteen-inch gravel-filled square openings in the sub and top soils, scattered throughout the field, to serve as drainage openings. To prevent sand from blowing onto the field from surrounding areas, a privet hedge was planted along the north boundary in the direction of the prevailing winds; this proved inadequate and a board fence was added shortly thereafter. The stable and open surface of the field was meant not only to provide open sight lines, but also to serve as an emergency landing surface in the event that planes could not use the two concrete runways due to adverse wind directions.⁴³

Construction of the two runways proceeded as work on the field was underway. The first, runway 15-33 was built parallel to Flatbush Avenue and was 3,100 feet

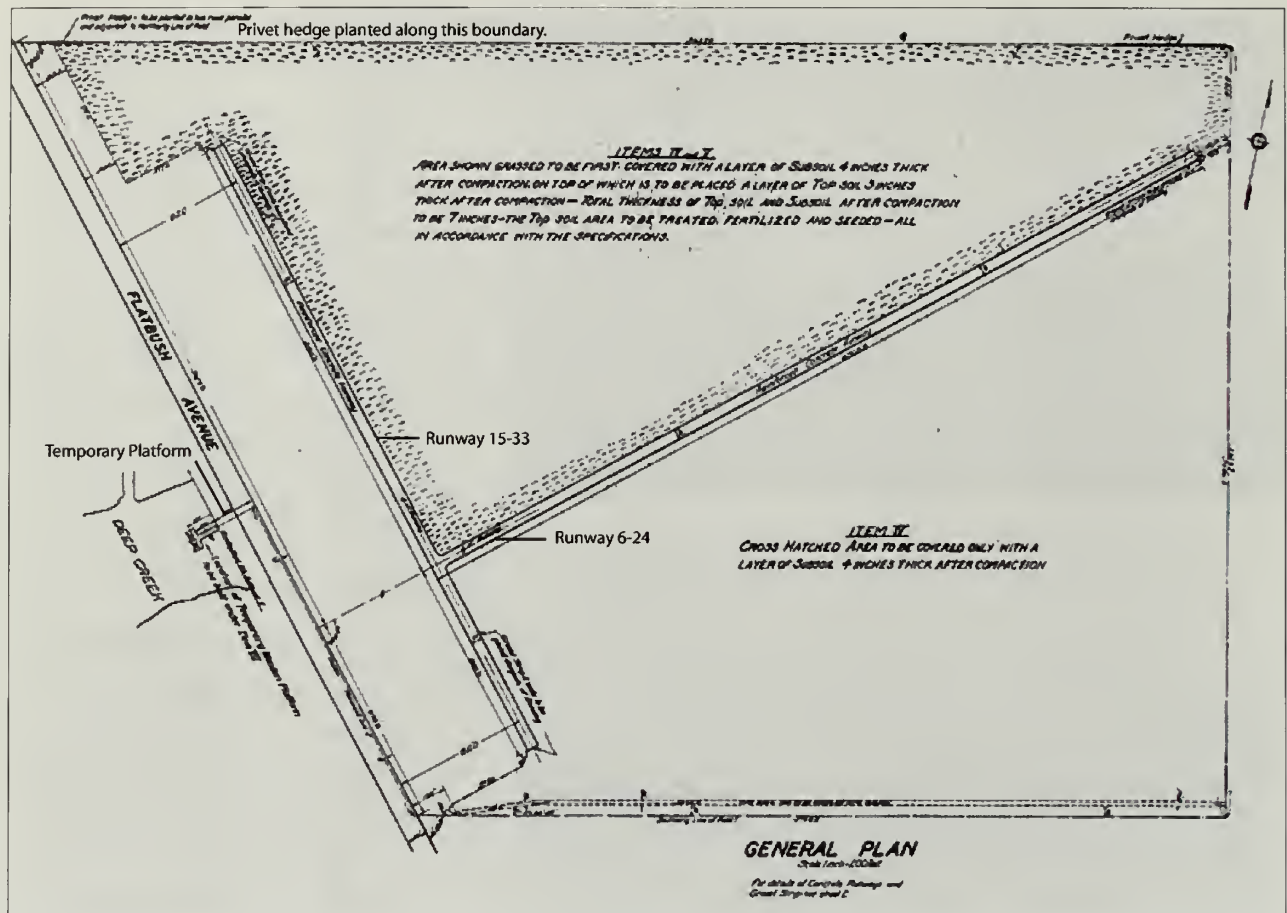


Figure 1.37: Detail, Department of Docks plan dated January 31, 1929 specifying work on the preparation of the airfield and construction of the runways. (City of New York municipal archives, reproduced from Porter Blakemore and Dana Linck, "Historic Structure Report... Floyd Bennett Field," 1981, annotated by SUNY ESF.)

Figure 1.38: View showing construction of the concrete runways, c.1929. (Photograph 29602, Gateway National Recreation Area Museum Collection.)



long (see fig. 1.37).⁴⁴ The second, runway 6-24, was perpendicular to the first and was 4,000 feet long, making it the longest concrete runway in the country. The *New York Times* reported that both were of "...ample length for use in any wind by the largest of the nation's air transport planes or the fastest landing of the racing ships now used."⁴⁵ Both were initially fifty-feet wide and eight inches thick, constructed of steel reinforced concrete (fig. 1.38). Gravel strips were specified to run along the edges of the runways, each two feet wide and eight inches deep to provide drainage and a shoulder between the grass and runways.⁴⁶ Before the runways were completed, the Department of Docks awarded a separate contract to double the width of the runways to 100 feet. This was done to meet the requirement of the Department of Commerce A1A rating.⁴⁷ Runway lighting, a technology still under development at the time, was not part of the initial plan for the runways.

By 1930, Floyd Bennett Field included seeded fields and two concrete runways. While construction of the buildings had not yet begun, the distinct character of the airport was already emerging. From the air, its geometric form and



Figure 1.39: Aerial view of the recently completed Floyd Bennett Field looking east showing contrast with surrounding estuary, 1931. (Digital image 727099F, copyright New York Public Library.)

manicured, engineered landmass stood out starkly from the surrounding natural estuary (fig. 1.39). The landscape was kept as open as possible, without trees or other obstructions, to maximize sight lines and eliminate possible obstructions along the flight paths, although buildings, trees, and a tall chimney remained on Barren Island to the south. The perpendicular arrangement of the runways illustrated the highly geometrical forms common in airport design. The placement of runway 15-33 parallel to Flatbush Avenue also defined the strong linear arrangement of the western side of the airfield, to be further emphasized with the construction of the airport's hangars and administration building.

Construction of Hangar Row

While construction of the runways was beginning in late 1929, the Department of Docks awarded contracts for the construction of the major buildings and surrounding apron in the part of the airport that would become known as Hangar Row.⁴⁸ For this part of the construction, the department made a few modifications to the original master plan. Instead of separate administration and passenger terminal buildings, the city decided to erect a single building housing both functions. For the hangars, the contracts were limited for financial reasons to eight of the fourteen paired hangars proposed on the master plan. The city planned on building the additional hangars at a later date, but this never happened. Construction drawings were finalized in late 1929 and work began first on the hangars in early 1930 and was completed a year and a half later. Upon completion

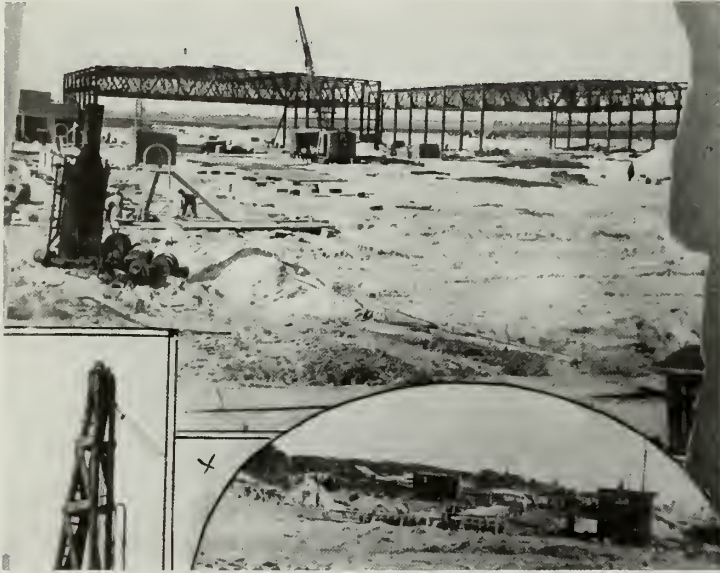


Figure 1.40: Collage of photographs showing construction of the trussed steel-frame hangars, c.1929. The bottom right photograph is looking south along Flatbush Avenue toward Barren Island (tree-covered area in background). (Photograph 18986, Gateway National Recreation Area Museum Collection.)

Figure 1.41: Hangars 5-8 looking north with the concrete apron at right and Flatbush Avenue at left, c.1930. The wings on the outer sides of the hangars are the lean-tos, and the dark ground surfaces are asphalt pavers. (Photograph 18883, Gateway National Recreation Area Museum Collection.)



in 1931, Hangar Row consisted of two clusters of four paired hangars parallel to Flatbush Avenue that defined the western edge of the airfield and the public face of the airport.

Each steel-frame fireproof hangar, measuring a clear span of 120 by 140 feet, consisted of trussed steel frames and concrete floors built on concrete piles extending thirty-five feet into the sandy fill (fig. 1.40). The hangars were designed according to a unified architectural style that would be used on all airport buildings, with the exception of the Administration Building and a few other buildings. The hangars reflected their modern function and advanced structural engineering

with stylized classical detailing in the Art Deco style. Each was enclosed by large sliding doors and anchored by buff-colored tapestry brick corner piers with cast-stone detailing including quoins, coping, lintels, and water tables (fig. 1.41). The aluminum alloy and glass doors were located on the north and south sides of the hangars, with an overhead clearance of twenty-two feet. The stamped metal parapets above the doors featured the hangar number and titles 'City of New York,' and 'Floyd Bennett Field.' These titles later changed as different agencies occupied the hangars. Each hangar had a 30 by 140-foot lean-to attached to either the east or west side for office and shop space.

As part of the hangar construction, the parking and taxi areas surrounding each building were surfaced in three-inch black asphalt blocks, and to the east facing the airfield, a large concrete apron was constructed, parallel to runway 15-33. The apron was designed as a taxiway, aircraft parking area, and passenger boarding area.

While construction of the hangars was nearing completion, work began in 1930 on the central Administration Building. Located directly between the two groups of hangars on Hangar Row, the Administration Building served as the airport's



Figure 1.42 (top): View of the main or Flatbush-Avenue façade of the Administration Building nearing completion, c.1931. (Photograph 18883, Gateway National Recreation Area Museum Collection.)

Figure 1.43 (bottom): The rear or airfield side of the Administration Building several years following its completion showing the control tower and terrace, c.1938. (Photograph 18392, Gateway National Recreation Area Museum Collection.)

passenger terminal and housed administrative offices. Unlike the hangars, the two-story, three-bay rectangular building was designed in a conservative neoclassical style typical for public buildings of the period such as post offices, court houses, and train stations. Such a familiar style was chosen to help passengers feel at ease with what many still considered an untried mode of travel.⁴⁹ Characteristic neoclassical features included a symmetrical façade with a central portico, simple red brick walls set on a raised water table with cast-stone and marble detailing, and double-hung multi-paned sash windows (fig. 1.42). The main entrance of the building faced Flatbush Avenue, with the entablature reading “City of New York, Department of Docks, Floyd Bennett Field,

Municipal Airport.” The one unusual feature—the control tower—appeared as a traditional cupola from the front of the building. The base of the tower was a brick half-octagon projecting from the rear of the building facing the airfield, with a steel frame, metal-clad tower cab that rose above the building’s roof line. This cab was detailed with classical arched window openings and pilasters (fig. 1.43). Passengers entered from the front of the building and could wait inside in a central waiting room and lounge, dine in a restaurant, or watch planes taking off from a balustraded terrace that ran across the entire length of the façade facing the airfield. Steps led down from the terrace to the apron where passengers would embark at the awaiting planes on the concrete apron.

Opening and Dedication

By the summer of 1930, most of the initial construction had been completed on the hangars and runways, allowing the airport to open for limited operations



Figure 1.44: Aerial view of Floyd Bennett Field looking east probably during the official dedication on May 23, 1931 with crowds on the Hangar Row apron. Visible in the right distance is the fill for the proposed seaplane base. Also note unfinished area surrounding the Administration Building. (Digital image 730522F, copyright New York Public Library.)

on June 26, 1930. Mrs. Cora Bennett, Floyd Bennett's widow, and Rear Admiral Richard E. Byrd were both present at an initial dedication held that day.⁵⁰ The official dedication ceremony was held nearly one year later, on May 23, 1931 (fig. 1.44). By this time, the first phase of construction was largely complete, except for the Administration Building and its surrounding parking areas and entrance drives, at a cost of nearly 4,500,000. Approximately 25,000 spectators attended the ceremony, including famous

pilots, notable military personnel, and foreign dignitaries. New York City Mayor James Walker officiated and Mrs. Cora Bennett unveiled a plaque dedicating the field to her late husband. The occasion was broadcast live on nationwide radio, with opening remarks by General Douglas MacArthur, reporting via radio from Washington, D.C.⁵¹ The Army Air Corps provided an aerial maneuver show during the ceremony. The first planes to arrive following the dedication and official opening were eight Navy planes commanded by Lieutenant R.F. Whitehead, stationed at the nearby Valley Stream (Long Island) Airport.⁵²

Initial Navy Presence at Floyd Bennett Field

After World War I, it became common for the military to establish aviation bases at municipal airports. The American public had grown weary of military spending, particularly on the development of new bases. It was easier and less expensive for the military to associate themselves with established airports.⁵³ Having the military at municipal airports may have also made American travelers more comfortable with the still new technology of flight.

When Floyd Bennett Field officially opened for commercial traffic on May 23, 1931, the Navy had already made an agreement with the city to occupy some of the new airport facilities beginning June 1, 1931. This coincided with the closing of the nearby Naval Air Station Rockaway, which was being redeveloped as part of the city's Jacob Riis Park. When that air station closed, the Navy relocated some of its operations to Floyd Bennett Field. A 1931 memo from a Department of

Docks official to the Navy Bureau of Aeronautics also reflected a broader sharing of facilities:

*Permission is hereby granted to the United States to use and occupy one of the hangars at . . . Floyd Bennett Field . . . the exact hangar to be designated by the Commissioner of Docks. This permit also includes the right of the United States Navy to have full use of the field and all the airport facilities.*⁵⁴

The Commissioner of Docks chose hangar 1 (the southeastern-most hangar in Hangar Row) for the Navy to occupy, for which they paid one dollar per year. The Navy trained reservists and maintained some of their aircraft in the building. The city allowed the Navy to use other facilities as needed, although they were required to pay for any services used, such as necessary lighting and power. The Navy soon requested use of more facilities, and in May of 1932, the city granted the Navy permission to occupy hangar 5, under the same conditions as the use of hangar 1.⁵⁵

SECOND CONSTRUCTION PHASE, 1931-1934

By the end of the year following the formal dedication in May 1931, Floyd Bennett Field had become one of the country's leading airports as the city had planned. The 1932 National Aeronautical Chamber of Commerce Aircraft Yearbook reported, "The year witnessed the opening of several of the finest new airports yet constructed, including New York's new municipal port, Floyd Bennett Field, with the longest runways in the world." The Department of Docks' Sixtieth Annual Report reported that from May 23 through December 31, 1931, Floyd Bennett Field accommodated 1,153 commercial planes and 605 military planes, had approximately 25,000 landings, carried 17,700 passengers, handled 4,000 pounds of mail (outside of the exclusive airmail contract held by Newark), and instructed fifty students. Within another two years, traffic at Floyd Bennett Field had more than doubled. It had become the second busiest airport in the nation with 51,828 landings, second only to Oakland, California, with 66,000 landings. Rival Newark airport, however, carried more passengers and retained the exclusive airmail contract.⁵⁶ The number of passengers at Floyd Bennett Field was not, however, from regularly scheduled commercial service, but rather by small private aircraft companies that offered sight-seeing and custom transport.

To maintain its place as one of the nation's most advanced airports and keep its hope of securing the airmail contract, the city still had a long list of improvements to make. Under the second phase of construction following the airport's official dedication, one of the city's chief objectives was to receive its Class A1A rating from the Department of Commerce. In order to receive this rating, the airport had

to add equipment for night flying and other navigational aids, as well as storage and repair shops that were apparently accommodated within the hangar lean-tos.⁵⁷ To install the night-flying equipment, in late 1931 the city awarded a contract to the General Electric Company for installation of lighted initials 'NYC' on the roofs of hangars 2 and 6, and a north arrow on the roof of hangar 4.⁵⁸ A lighted windsock installed on the roof of hangar 5 was most likely included in this work, and a wind tee was probably added around the same time off the north end of the apron. Probably as part of another contract to General Electric, white boundary lights were installed on the ground along the perimeter of the field on the north, east, and south sides, and on the east along the outer edge of the Hangar Row apron.⁵⁹

In 1932 around the same time that General Electric was at the airport, the city installed a floodlight system to illuminate the entire field. This system, designed by the Sperry Gyroscope Company of Brooklyn, included a series of individual floodlights mounted along the parapet of the Administration Building, and two towers in the field each housing 5,000,000 candle-power floodlights. One

floodlight tower was located along the northern boundary in the center of the airfield, and the other was located off the south end of the Hangar Row apron. Each tower stood approximately twenty-eight feet tall and fourteen feet square, with a flat roof and projecting concrete balcony for the floodlight. The structures were designed in the standard airport style found on the hangars with tapestry brick, metal-frame windows, and cast-stone classical detailing.⁶⁰ (fig. 1.45).



Figure 1.45: One of the two Sperry floodlight towers built within the airfield in 1932 during the second construction phase, looking northwest toward Hangar Row. Note the airfield boundary light in the foreground. (Photograph 18879, Gateway National Recreation Area Museum Collection, from negative 78-17670, Smithsonian Institution.)

As part of the navigation-light system, an underground electrical system was installed throughout the field. This included several above-ground features, notably a transformer vault completed in 1932 at the south end of Hangar Row. This was a ten-foot by twelve-foot, flat-roofed building also designed in the airport's standard style with tapestry brick and cast-stone classical detailing.⁶¹ Around the same time, a twenty-five foot, square building constructed in the standard airport style with a stepped parapet was added next to the transformer vault to house a pump for the sewage disposal system.⁶² These two buildings were



Figure 1.46: View of the gate area showing the fence installed in c.1932, looking northeast from the Administration Building terrace, c.1937. The fence separated awaiting passengers and vehicles from the planes on the concrete apron. (Photograph 18963, Gateway National Recreation Area Museum Collection.)

Figure 1.47: View northeast from the Administration Building showing the widened apron and one of the new taxiways, c.1933. The object within the white circle is a windsock that was removed by 1935. (Photograph 18997, Gateway National Recreation Area Museum Collection.)



the first parts of a maintenance area that was apparently developed because of the need for unforeseen maintenance and support facilities that outgrew the originally intended area near the Administration Building indicated on the original master plan (see fig. 1.34).

Aside from addition of the maintenance area, other work undertaken to Hangar Row during the second phase of construction included two improvements to public-use areas surrounding the

Administration Building. In c.1932, the city built two diagonal entrance drives lined by sidewalks that converged at a central parking area in front of the Administration Building. The area between the drives was designed as a park-like lawn area, and the areas outside of the drives were surfaced in gravel as public parking lots.⁶³ This work was probably undertaken with funds from the Temporary Emergency Relief Administration (TERA), a state program begun by Governor Franklin D. Roosevelt in 1931. Funds were apparently insufficient to complete work on the entrance area landscape, which was to feature plantings and light standards. Other improvements undertaken to the area surrounding the Administration Building included installation of a fence along the edge of the Hangar Row apron to separate the planes and boarding area from waiting passengers.⁶⁴ (fig. 1.46). A black-and-white checkered curb ran along the length of the fence on the apron as a visual marker for pilots. Within the fence were a series of gates, which served as the boarding entrance to specific planes. This became the equivalent of what is known in today's airports as the gate area. The area between the gates and the Administration Building, surfaced in asphalt block, was used by cars and taxis as a passenger drop-off area.

Beyond the gates, the airfield saw several improvements during this phase of construction aside from the installation of the Sperry floodlight towers. The most conspicuous change was the addition of three short thirty-foot wide taxiways completed on October 12, 1932 that connected Hangar Row with runway 15-33 (fig. 1.47). As part of the project, the apron was widened along its east side.⁶⁵ These improvements were made

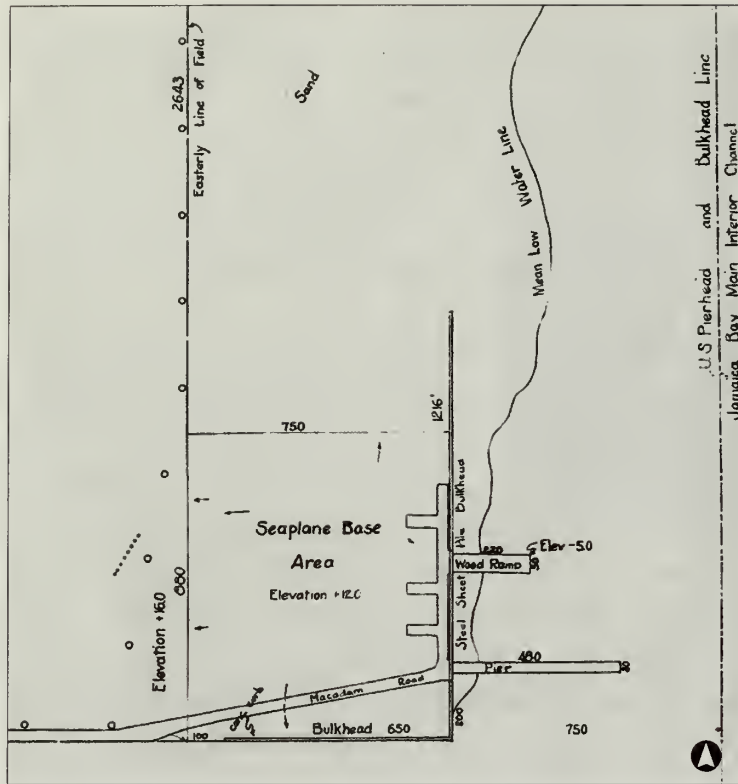


Figure 1.48: Map of the seaplane base following completion of the site work, roads, pier, and ramp, c.1933. The macadam road provided vehicular access to Hangar Row. (Detail, Department of Docks, "General Location Plan, Floyd Bennett Airport," 21 December 1931, updated 26 August 1933 (apparently to show seaplane base) and 17 January 1936.)

part of the initial construction of the airfield that began in 1928. By August 1931, the city had completed a seaplane ramp, measuring fifty feet wide and extending 220 feet into Jamaica Bay on a wood-pile structure (fig. 1.48). To the south of the ramp, they city built a pier for seaplanes to dock while waiting to come ashore. Measuring 480 feet long and thirty feet wide, the pier may have incorporated part of the earlier city pier built in c.1918, which had probably been removed in part due to extension of the shoreline out into Jamaica Bay as part of the initial filling operations. In addition to the pier, three seaplane anchorage buoys were installed in Jamaica Bay as additional places for waiting seaplanes.⁶⁷

The seaplane base was accessed from the main facilities in Hangar Row along a narrow road extending from the south end of the Hangar Row apron east along the south boundary of the airport, paralleling the paper road on Barren Island, Pelican Street. Probably laid out in c.1929 during the initial phase of construction with an oiled gravel surface, the road turned north along the bulkhead where it was surfaced in macadam. The road included three slots along the field side apparently designed as seaplane parking areas (see fig. 1.48).

As part of the seaplane base, one or more seaplane runways were laid out in Jamaica Bay. These were designated in the water by buoys or similar anchored guides. Runway 18-36 paralleled the shoreline and extended along Island Channel, also known as the Jamaica Bay Main Channel (fig. 1.49). At the south end of the runway in Rockaway Inlet off the southeastern tip of Barren Island

to reduce what had probably become a point of congestion on the single connection from the Hangar Row apron to the runways provided by runway 6-24. The only other improvement to the airfield included the installation of a four-foot tall wire mesh sand fence along the airport's southern boundary to control drifting, completed on February 2, 1932.⁶⁶ A privet hedge and board fence had previously been installed along the north boundary for a similar purpose.

One of the primary projects during the second phase of construction was completion of the seaplane base at the southeast corner of the airfield on Jamaica Bay, a facility highly recommended by the city's aeronautical engineer Clarence Chamberlin that was part of the airport's master plan (see fig. 1.34). The site had been filled behind a steel bulkhead as

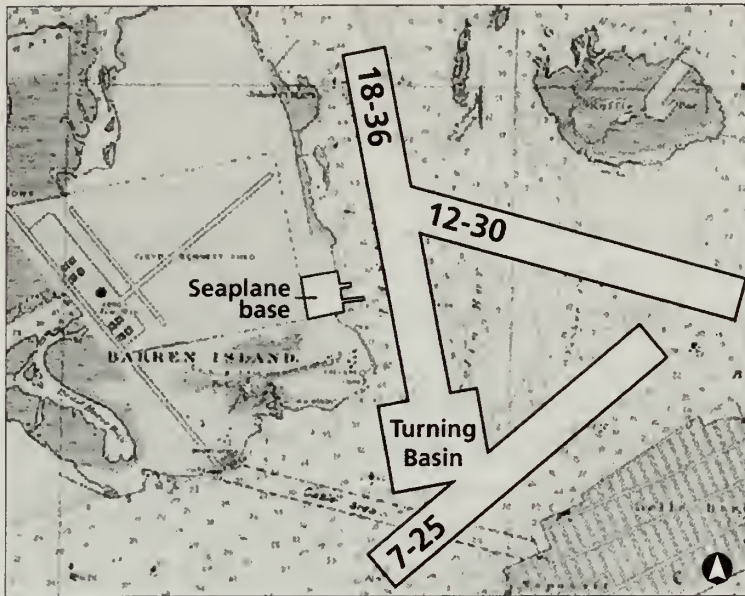


Figure 1.49: Location of seaplane runways associated with Floyd Bennett Field; based on "Naval Air Station New York...General Development Map," 1960. 18-36 may be the original runway, with 12-30 and 7-25 added later. (Detail, U.S. Coast & Geodetic Survey, "Jamaica Bay and Rockaway Inlet," 1934, annotated by SUNY ESF.)

was a square turning basin. Runway 7-25, running parallel with Rockaway Inlet and Rockaway Beach, and runway 12-30, running southeasterly in the open expanse of Jamaica Bay south of Ruffle Bar, may have been added at a later date.⁶⁸

The seaplane base at Floyd Bennett Field was envisioned as part of a commuter service to Manhattan, meant in part to compensate for the remote location of the airport from the center of the city. By August 1931, the Department of Docks was still planning on expanding the seaplane base to include not only the four paired hangars shown on the

airport master plan, but an additional two sets of hangars for a total of eight, as well as two additional seaplane ramps.⁶⁹ The city did not proceed with building the hangars and additional ramps because the airport's overall commercial passenger service remained very limited—as of 1934 there was still no daily passenger service offered by any of the major commercial airlines. Despite these limitations, the seaplane base was actively used for experimental and show flights. A notable landing occurred there in 1933, as described in a 1939 guide to New York City:

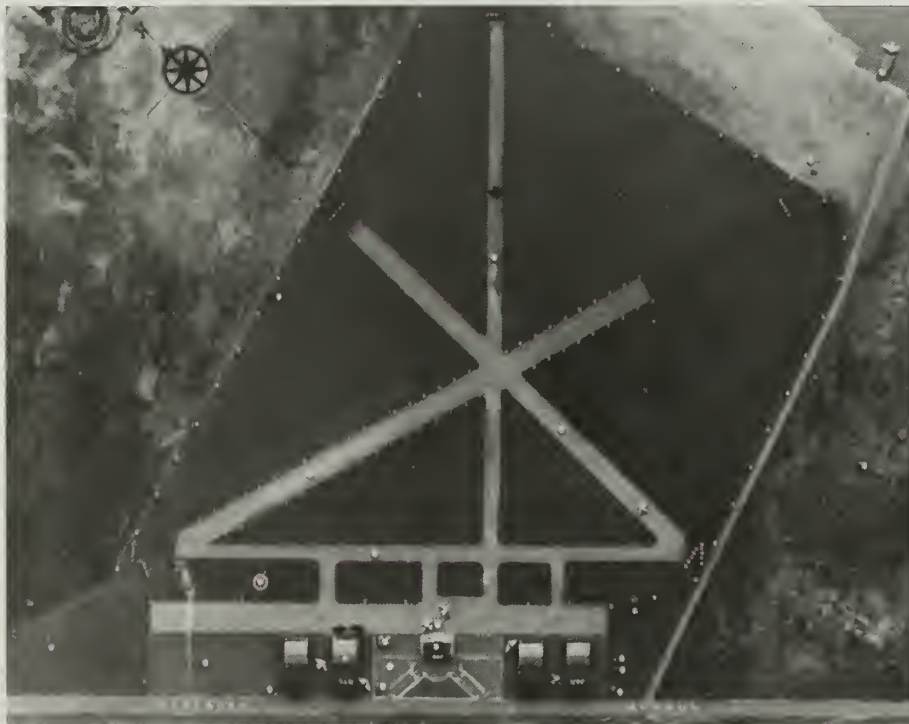
Its site on Jamaica Bay makes Floyd Bennett Field particularly suitable for seaplanes, an advantage impressively demonstrated in 1933 by the visit of twenty-four giant Italian seaplanes under General Italo Balbo on their way home after a transatlantic trip to the Century of Progress Exposition in Chicago. A ramp for seaplanes, 50 by 220 feet, at the eastern end of the field, gives access to ample water space.⁷⁰

THE WPA AND THE THIRD CONSTRUCTION PHASE, 1934-1938

The 1930s witnessed many advances in aviation, both in airplane technology and airport design. Planes became larger and heavier, requiring wider and longer runways, and lighting and radar systems were devised to aid navigation upon landing and take-off. New methods of easing boarding and creating a more welcoming experience for airport travelers were also being developed at many airports. The introduction of the Douglas DC-2 in 1934 and DC-3 in 1936 made air travel more comfortable and popular. These planes, which became the standard for commercial passenger flights, led to significant increases in air travel, with the total number of passengers rising nationally from 474,000 in 1932 to 1,102,000 in 1937 and to 1,176,858 passengers in 1938.⁷¹

In response to these advances, the Department of Docks began to draft plans for a major program of improvements to Floyd Bennett Field in c.1934, coinciding with planning for the adjoining park development and construction of the Marine Parkway Bridge. Over the course of a four-year period, the airport improvements would cost more than the original construction in 1929-31. The city was fortunate that the development of these improvements coincided with passage of federal work-relief programs that would greatly ease the city's financial burden. Of particular importance was the federal Works Progress Administration (WPA), authorized in April 1935 to put the unemployed back to work on public projects. The WPA funded thousands of blue-collar construction jobs, as well as jobs in the arts and administration. Across the country, the WPA funded significant improvements to transportation infrastructure, including the construction of over 150 new airfields and 280 miles of runways by 1938.⁷² While the city Department of Docks continued to administer Floyd Bennett Field and design its improvements, federal funding covered most of the costs and labor. Between 1934 and 1938, federal spending at the airport totaled approximately \$4.7 million. During the same period, the City of New York contributed just over \$339,000.⁷³

Figure 1.50: Photograph of a model of Floyd Bennett Field taken in November 1935 showing the proposed improvements begun in c.1934 with assistance of the WPA. The origin and location of the model is not known. (Photograph 18860, Gateway National Recreation Area Museum Collection.)



The WPA work included two new runways, installation of navigational aids, expansion of the hangars and aprons, building of secondary support and maintenance buildings, and improvement of the airport entrance landscape with lawn and plantings. These improvements were shown on a model of the airport, probably made at the beginning of the improvement program in 1934 or 1935 (fig. 1.50). The city also used the WPA to build utilities, including additional storm

drains within the airfield, sewer lines, water mains, underground fuel tanks, and electrical cables.⁷⁴ These improvements had minimal impact on the character of the landscape.

Although Floyd Bennett Field would not see significant increases in passenger travel that were being experienced elsewhere across the country, the improvements made to the airport between 1934 and 1938 reflected the growing acceptance of flight as a viable means of passenger

transport as well as the city's continuing efforts to attract the airmail contract and commercial passenger carriers. With many of the airport improvements complete or underway, the city secured the first daily commercial passenger service from Floyd Bennett Field in 1937. That year, American Airlines began daily service between New York and Boston, which continued through 1938. To address the long distance between Manhattan and the airport, the city also operated a commuter connection using seaplanes that departed from piers at Wall Street and 31st Street.⁷⁵ Despite American Airlines' presence and the seaplane connection, no other commercial passenger airlines decided to follow.⁷⁶ Most passengers at Floyd Bennett Field were sightseers on private craft—numbering over 20,000 in 1937. The airport did see increased use by other agencies, notably the Navy which moved into hangar 2 in addition to hangars 1 and 5; and the U.S. Coast Guard and New York City Police Aviation Division, which shared hangar 4 beginning in 1936.⁷⁷

Additions to Hangar Row

Among the first projects undertaken through the WPA was expansion of the hangars, including the construction of infill buildings between each pair, and the addition of a second floor on some of the lean-tos (fig. 1.51). These additions were planned to provide space for machine shops, utilities, and offices. A major need for the additional space arose from the Navy's expanded presence at the airport, as reflected in a December 1936 letter from the Naval Reserve Aviation Base commanding officer to the city upon completion of one of the projects:

A separate WPA project sponsored by the City of New York, involving the quarters occupied by this Base is nearing completion. This project involves

remodeling the first floor, and the addition of a second floor to the existing lean-to on hangar no. 1. Also, the construction of a building between the hangars no. 1 and 2 to house a storeroom, plane overhaul shop, machine shop, and dormitory. The part concerning the lean-to is 99% complete and this base is occupying the offices, etc., in this two story lean-to.⁷⁸



The infill and lean-to additions were designed to match the style of the original hangars, with buff tapestry brick and stylized classical detailing.

Figure 1.51: View of Hangar Row looking north showing four new hangar infill buildings, c.1937. This photograph also shows the landscape improvements to the airport entrance, and construction underway on the Dope House in the maintenance area at the south end of Hangar Row. The lighted "NYC" signs on the hangars were installed in c.1932. (Copyright Cradle of Aviation Museum, Garden City, New York.)

The additions were finely detailed with a curved parapet above the main entrances containing a cast-stone bas-relief panel with stylized wings and propellers, and the letters 'N.Y.C.' and 'F.B.A.' for Floyd Bennett Airport (the word airport was sometimes substituted for field). The first infill building, constructed in 1934, was a boiler room and machine shop located between hangars 3 and 4. Between 1934 and 1937, the WPA constructed the infill buildings connecting hangars 1 and 2, 5 and 6, and 7 and 8.⁷⁹

Another focus of work undertaken through the WPA was enlarging the maintenance facilities at the south end of Hangar Row near the earlier pump house and transformer vault. In 1935, two garages and a gasoline house were built here, forming a line of buildings between the apron and Flatbush Avenue. These were utilitarian wood-frame and sheet-metal buildings with gable roofs, probably intended to be temporary (see fig. 1.51). The largest and most elaborate of the new maintenance buildings, the Dope Shop, was constructed in 1937 according to the standard architectural style of the airport with buff tapestry brick and cast-stone detailing. Built to house a maintenance shop where waterproof varnish known as dope was applied to aircraft, the Dope Shop was a 135-foot long, one-story building with a parapet roof and two large glazed garage bays wide enough for aircraft. Immediately upon its completion, the Navy and the City of New York shared occupancy of the Dope Shop.⁸⁰

Improvements to the Airport Entrance & Gate Area

In 1935, the city with the help of the WPA undertook a number of landscape improvements around the Administration Building that would complete a welcoming, familiar, and park-like atmosphere for passengers apprehensive of flying. Following initial work that included the two diagonal entrance drives that converged a central parking, the Department of Docks finalized plans for completing the entrance area landscape in May 1935. Plans called for a central lawn with light standards and clipped privet hedges along the drives enclosing massings of shrubs (fig. 1.52, see also fig. 1.51). The front of the Administration Building was to be lined by foundation shrubs and flower beds, with specimen junipers flanking the entrance stairs. An island of shrubs bordered by hedges was designed to the south of the building. In addition to privet and juniper, the specified plantings included sycamore, spirea, lilac, forsythia, rose-of-sharon, roses, cannas, hydrangea, azaleas, vinca, and ivy, among others. In concept, the design extended the park-like landscape of Marine Parkway—the planned improvement of Flatbush Avenue—into the airport. The plan also called for formalizing the drives to the Deep Creek Basin dock across Flatbush Avenue as a sort of miniature mirror image of the main entrance landscape.⁸¹

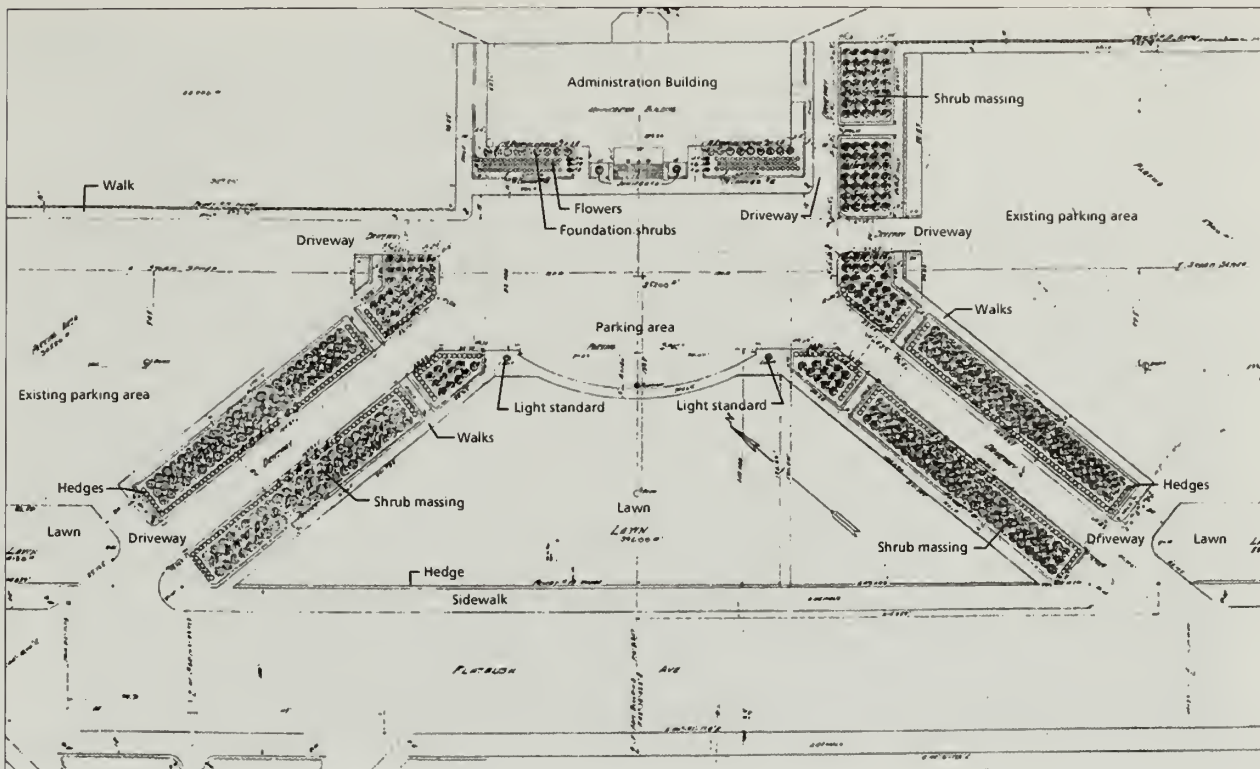


Figure 1.52: Detail, planting plan for the airport entrance by the Department of Docks, approved May 6, 1935. The plantings in this plan were implemented as designed, and a central walk was added in the lawn. (City of New York municipal archives, reproduced from Judith A. Quinn, "Historic Structures Report, The Administration Building," 2004, annotated by SUNY ESF.)

Work on completing the entrance landscape began in 1935 using WPA labor and funds, and was finished by fall 1936. The plan was implemented largely as designed, except that the massings of shrubs bordering the diagonal driveways were replaced with lawn.⁸² (fig. 1.53). Individual shrubs sheared into mounds lined the drives while clipped privet hedges bordered the outer walks. A low clipped border hedge, probably privet, extended around foundation shrubs planted along all sides of the Administration Building.⁸³

Aside from plantings, the landscape improvement project also added a central walk through the front lawn, on axis with the front entrance of the Administration Building (fig. 1.54). This walk was lined by sycamore trees that tied into a line of roadside sycamores along Flatbush Avenue, where the walk was marked by two cast-iron light standards. Within the lawn, the walk formed a circle around a flagpole and a rustic oak sign consisting of a signboard hung within a nine-foot tall gable-roofed pavilion set on a brick base (fig. 1.55). This rustic sign, designed according to a plan developed by the Department of Docks approved in October 1935, reinforced the park-like feeling of the landscape.⁸⁴ This character was further enhanced through the addition of two rustic bracketed-arm wood light standards that were installed along the edge of the front lawn and parking area (see figs 1.53, 1.54). These were the same style of light standards installed on the region's state park and parkway system then under development.

Upon completion of the central lawn area, the public gravel parking areas to north and south of the Administration Building were formalized by the addition of



Figure 1.53: Detail of the entrance area landscape installed in 1935 looking southeast showing concrete walks and diagonal drive with lawn lined by privet hedge and shrubs, 1938. In the background is the central parking area and one of the rustic wood light standards. (Photograph 18394, Gateway National Recreation Area Museum Collection.)



Figure 1.54: The airport entrance area upon completion showing central walk, photographed November 20, 1936. Note the park-like rustic entrance sign and wood light standards in the background. (Photograph 69-N-7763D, Still Pictures Branch, National Archives II.)



Figure 1.55 (above): The rustic airport entrance sign shortly after installation, c.1935. The names "Floyd Bennett Airport" and "Floyd Bennett Field" were both used at the time. The person at left may be Ken Behr, the airport manager; the other person is unidentified. (Photograph 19622, Gateway National Recreation Area Museum Collection.)

walks and railings along the gate area and lawn along Flatbush Avenue. Since the parking capacity had been decreased with the landscape improvements, two new lots were completed at the north end of Hangar Row in 1936, probably designed primarily to handle parking for major events given their distance from the Administration Building.⁸⁵ (fig. 1.56). These lots were also surfaced in gravel, and had five entrances (curb cuts) off Flatbush Avenue. Pedestrian connection to the Administration Building was possible along a sidewalk that paralleled Flatbush Avenue.

Prior to the entrance area landscape improvements, the parking and gate area around the Administration Building had served as a place for a variety of temporary stands and booths selling refreshments.⁸⁶ With completion of the entrance landscape, the city moved ahead with the WPA project shown on the c.1935 airport model (see fig. 1.50) to build a permanent facility for visitor services known as the Field

House. Completed in late 1936 and opened in 1937, the one-story, thirty-seven by twenty-six foot building was constructed north of the Administration Building straddling the north parking lot and gate area. Designed in the more conservative neoclassical style of the Administration Building, the building featured a central block with two lower wings, red brick walls, multi-paned windows, and cast-stone trim (fig. 1.57, see also fig. 1.56). The wings housed public lavatories and the central block contained space for sale of cigars, cigarettes, and light refreshments,

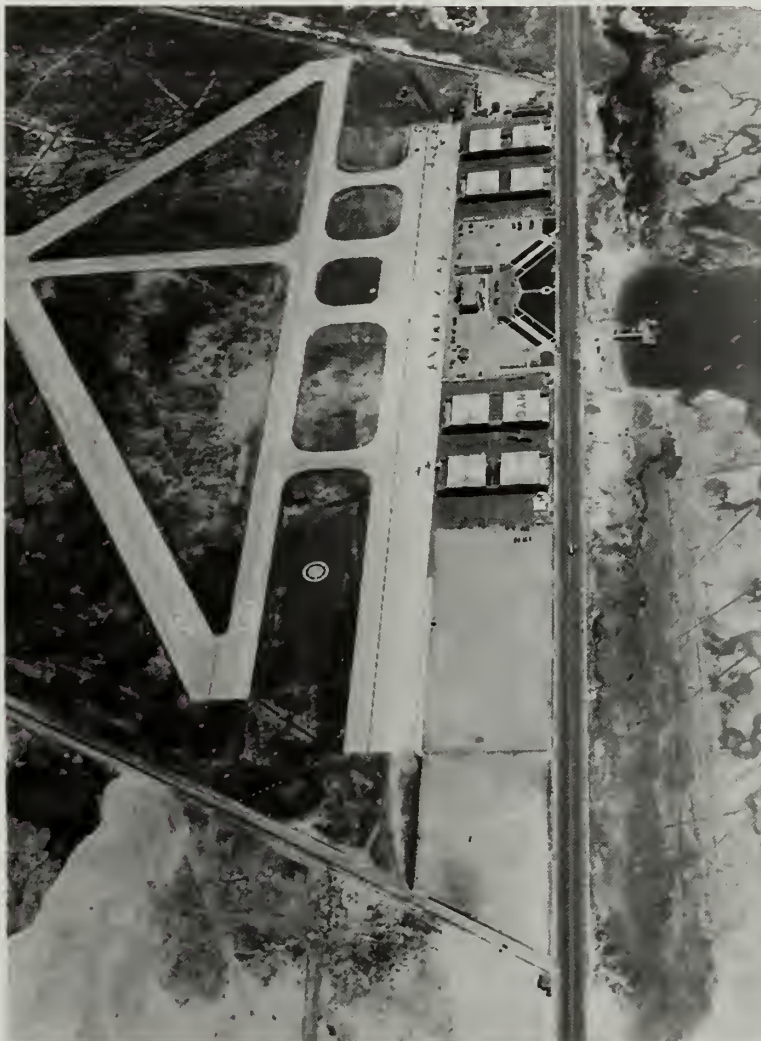


Figure 1.56: Aerial view of Hangar Row looking south at the end of the WPA-funded improvement program, August 1938. Note new entrance landscape, parking areas north of Hangar Row, new runways, and a realigned south boundary road. Barely visible are the Field House, sprinkler pump house, and gasoline pump house in the north parking lot. The small building at the bottom along Flatbush Avenue was a refreshment stand. This photo also shows the compass rose added in the turf east of the Hangar Row apron in c.1935. (Photograph 18951, Gateway National Recreation Area Museum Collection.)



Figure 1.57: View looking southeast from the north parking lot at the nearly complete Field House, 23 December 1936. (National Archives, reproduced from Porter Blakemore and Dana Linck, "Historic Structure Report... Floyd Bennett Field," National Park Service, 1981.)

supplementing primary retail services within the Administration Building.⁸⁷

Soon after the Field House was built, the city and the WPA added two utility buildings within and adjoining the north parking lot, including a pump house that serviced a site-wide fire sprinkler system (see fig. 1.56). The small one-story building was built in the standard airport style with buff-colored tapestry brick and a cast-stone parapet inscribed with the title "Pump House." North of this building across a fence separating the north parking lot from hangar 6, the

city and WPA erected a six by eight-foot brick gasoline pump house, also designed in the standard airport style. Gas was pumped from eight underground storage tanks.⁸⁸

As part of the improvements to passenger services that included the entrance landscape and Field House, the city also made several changes to the gate area and apron, again through the WPA. In order to facilitate passenger circulation to the aircraft and bypass the busy drop-off area, the city built a passenger tunnel extending from the basement of the Administration Building to the Hangar Row apron. Built in 1935, the central stem of the tunnel headed 124 feet east below the gate area, then branched beneath the apron 120 feet to the north and south. At the end of each of the tunnel branches, flights of stairs led to a pair of rectangular hydraulically lifted hatches that opened onto the apron (fig. 1.58).⁸⁹ As a part of

the same project, the WPA also installed four turn tables on the apron to either side of the tunnel hatches. These were installed in



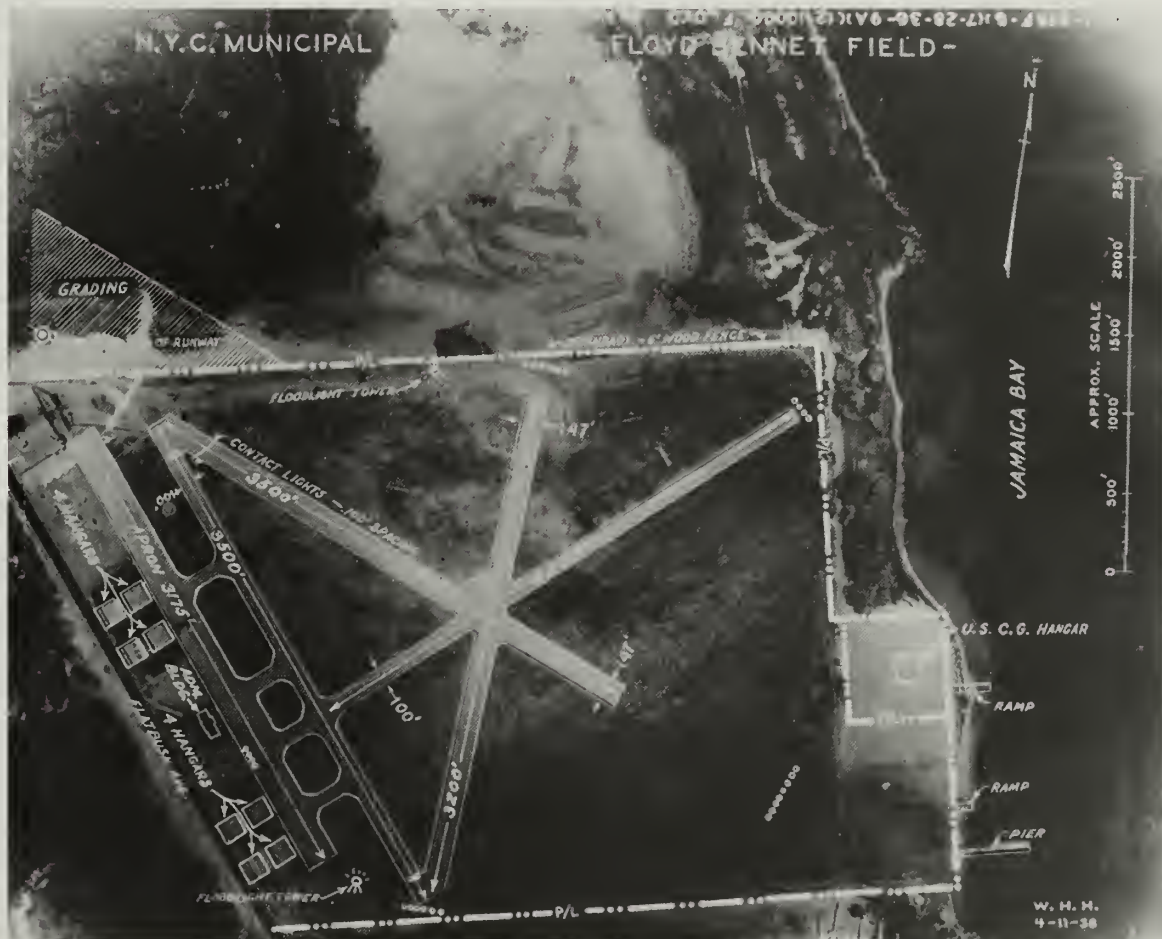
Figure 1.58: View of the gate area and apron looking southwest showing recently built rectangular passenger tunnel hatches and rotating platforms, c.1936. The annotations are on the original photograph. The hipped-roof booth at the corner of the parking lot was probably removed with opening of the Field House in 1937. (Photograph 22017, Gateway National Recreation Area Museum Collection.)

order to decrease the turning radius of the aircraft, facilitating quicker arrival and departure times. To accommodate the turn tables and tunnel hatches, the concrete apron was widened by fifty-four feet east into the airfield.⁹⁰

Improvements to the Airfield

While the majority of projects undertaken through the WPA were within Hangar Row, the most conspicuous (from the air) and functionally key improvements occurred on the airfield with the expansion of the runway and taxiway system, designed to accommodate larger and heavier aircraft. Work on two new 150-foot wide concrete runways, designated 1-19 and 12-30, and widening of the taxiways connecting runway 15-33 with the Hangar Row apron from thirty to one hundred feet, was completed in 1935. Runway 1-19 ran diagonally across the field from north to south, extending 3,500 feet from the southern end of runway 15-33, which was lengthened 400 feet to 3,500 feet (fig. 1.59). The second new runway, 12-30, ran diagonally across the field from northwest to southeast, extending 3,200 feet from the northern end of runway 15-33. At the intersection of the runways, the pavement was expanded between 1-19 and 12-30, creating a large expanse of concrete in the center of the airfield. The purpose of the two new runways was not only to expand the capacity of the airport, but also to give aircraft four directions

Figure 1.59: Annotated aerial of Floyd Bennett Field showing recently completed runways, graded runway approach, and airfield lights, July 1936. The photograph also indicates the proposed site of the proposed U.S. Coast Guard Air Station along Jamaica Bay. (Photograph 18917, Gateway National Recreation Area Museum Collection.)



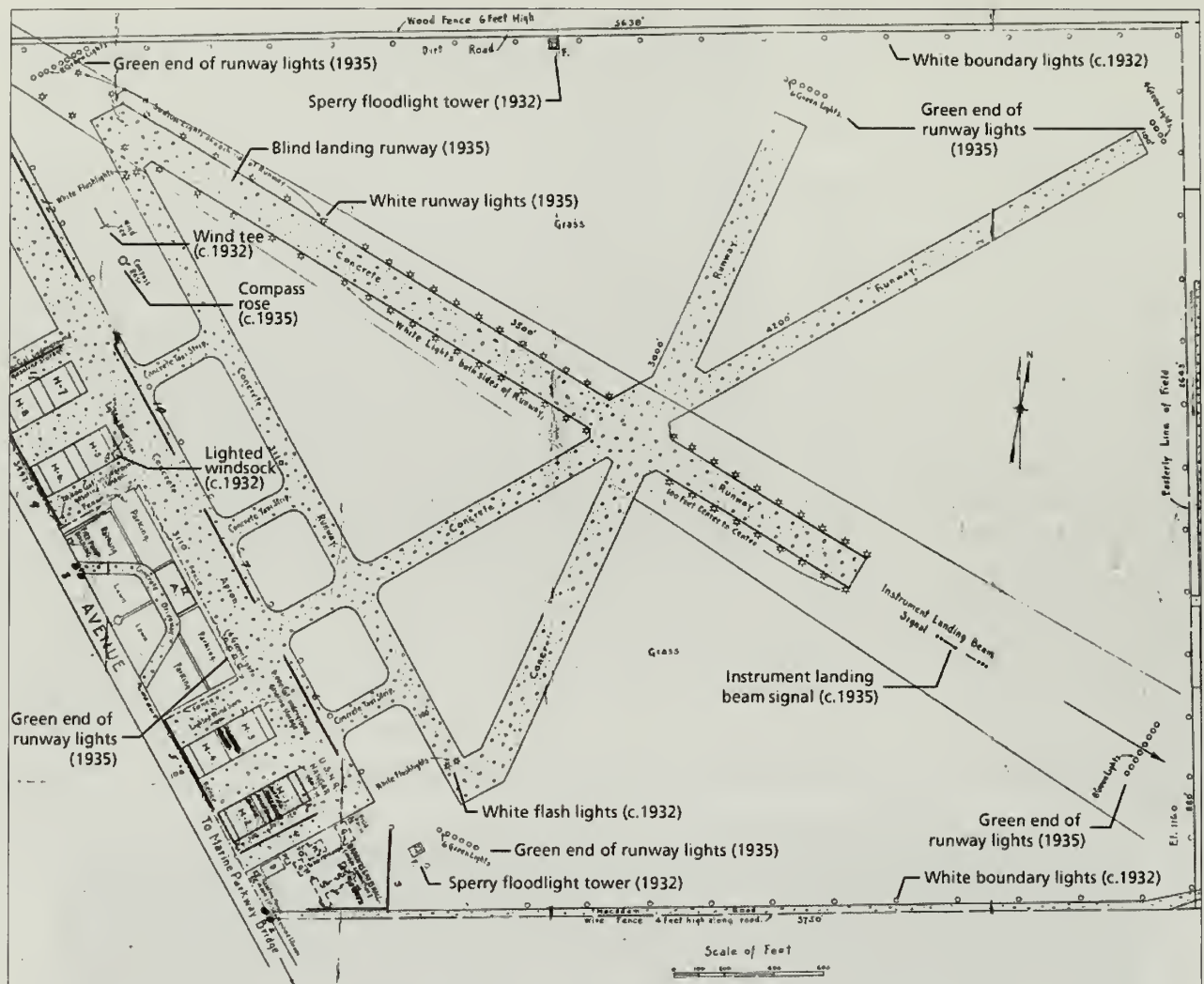


Figure 1.60: Detail of a map of Floyd Bennett Field updated to June 30, 1941 showing various aids to navigation, including boundary lights and floodlights installed in 1932, and runway lights installed in 1935. (Uncatalogued drawing, Gateway National Recreation Area Museum Collection, annotated by SUNY ESF.)

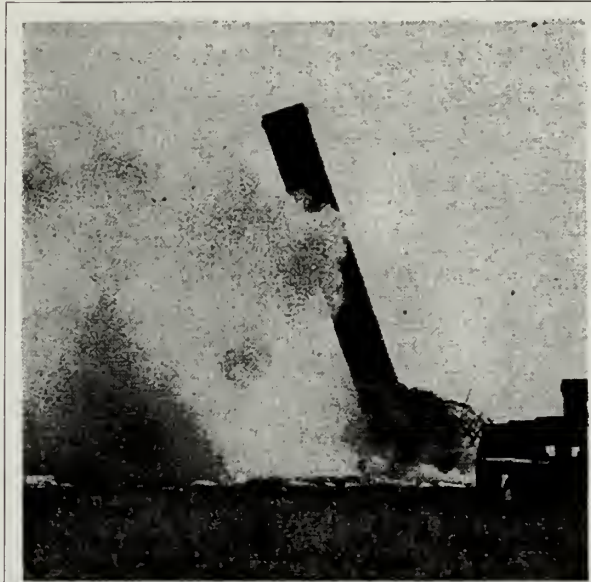
in which to land into the wind, rather than two. With the heavier aircraft such as the DC-2 and DC-3, the option of landing into the wind on the open airfield turf, as the airport had originally been designed, was no longer possible. To land safely, these aircraft required stable pavement.⁹¹

As a further improvement in the landing facilities, a runway lighting system was installed upon completion of the new runways in 1935. This system included a row of green end-of-runway lights, consisting of between four and eight individual lights within the airfield turf approximately 100 feet or more from the ends of each runway (fig. 1.60). The major component of this system was reserved for runway 12-30, which was designated as the “blind landing runway” for use at nighttime and inclement weather. The runway was lined on both sides by white ground lights spaced one hundred feet apart, and was also equipped with an “instrument landing beam signal.” Probably to service this new navigational lighting system, a transformer vault building was constructed in c.1935 north of hangars 7 and 8, in the standard airport style.⁹²

Aside from the electrical navigational aids, the city also built a compass rose in the turf between runway 15-33 and the Hangar Row apron in c.1935, as called for on the airport model (see fig. 1.50). Consisting of a central thirty-foot solid concrete circle and an outer sixty-foot diameter ring set flush with the ground, the compass rose was used by pilots to recalibrate their on-board compasses, a process known

as compass swing. The outer ring was probably marked to indicate true cardinal directions and the inner circle, magnetic cardinal directions.⁹³

One of the improvements made to the airfield during this time occurred to the south on Barren Island, on what was still private property. The flight path of runway 12-30, the blind landing runway built in 1935, came very close to the 227-foot chimney that remained at the southeastern tip of Barren Island, a relic from the defunct New York Sanitary Utilization Company. The *New York Times* reported on the project, complete with a photograph (fig. 1.61):



A MENACE TO AVIATION REMOVED
The 227-foot chimney at the Floyd Bennett Field crumbling yesterday under a dynamite blast.

After again expressing his determination to make Floyd Bennett Field the air mail terminus for New York, Mayor La Guardia pressed a button at 11:30 o'clock yesterday morning and set off a dynamite charge which brought

down, like a mighty tree, a brick chimney near the seaplane ramp on the south edge of the field. More than 1,000 persons attended the ceremonies.⁹⁴

Figure 1.61: Photograph of the New York Sanitary Utilization Company chimney being demolished to clear the flight path of runway 12-30. (*New York Times*, 21 March 1937. Copyright New York Times.)

Development of the Coast Guard Air Station

The model created in c.1935 for planned airport improvements (see fig. 1.50). did not identify new development along the Jamaica Bay waterfront. The model only showed the existing pier, ramp, and parking slots at the airport seaplane base, and not the additional seaplane ramps and hangars that had been shown on earlier plans.⁹⁵ Aside from less than anticipated seaplane traffic, the city may have eliminated these structures from its plans because of their location in the flight path for runway 12-30, added in 1935. A related change the model did show was a realignment of the south boundary road that provided access to the seaplane base from Hangar Row. The model showed the road realigned to run straight to Flatbush Avenue rather than curve north to the Hangar Row apron. This change to the road was probably made by August 1938 (see fig. 1.56).

With plans for expansion of the seaplane base gone by 1935, the city entered into a fifty-year lease with the U.S. Coast Guard on July 9, 1936 for land north of the seaplane ramp and pier. This was a ten-acre, 650-foot square parcel that had probably been bulkheaded and filled by the time of the lease as part of the

initial construction of the airfield in 1928-1929 (see fig. 1.59).⁹⁶ Here, the Coast Guard—a quasi-military agency under the Department of the Treasury—planned to build an air station to house its air-sea rescue activities, using seaplanes. While plans were underway for development of its new facilities along Jamaica Bay, the Coast Guard leased space in hangar 4, where it stored a single seaplane.⁹⁷

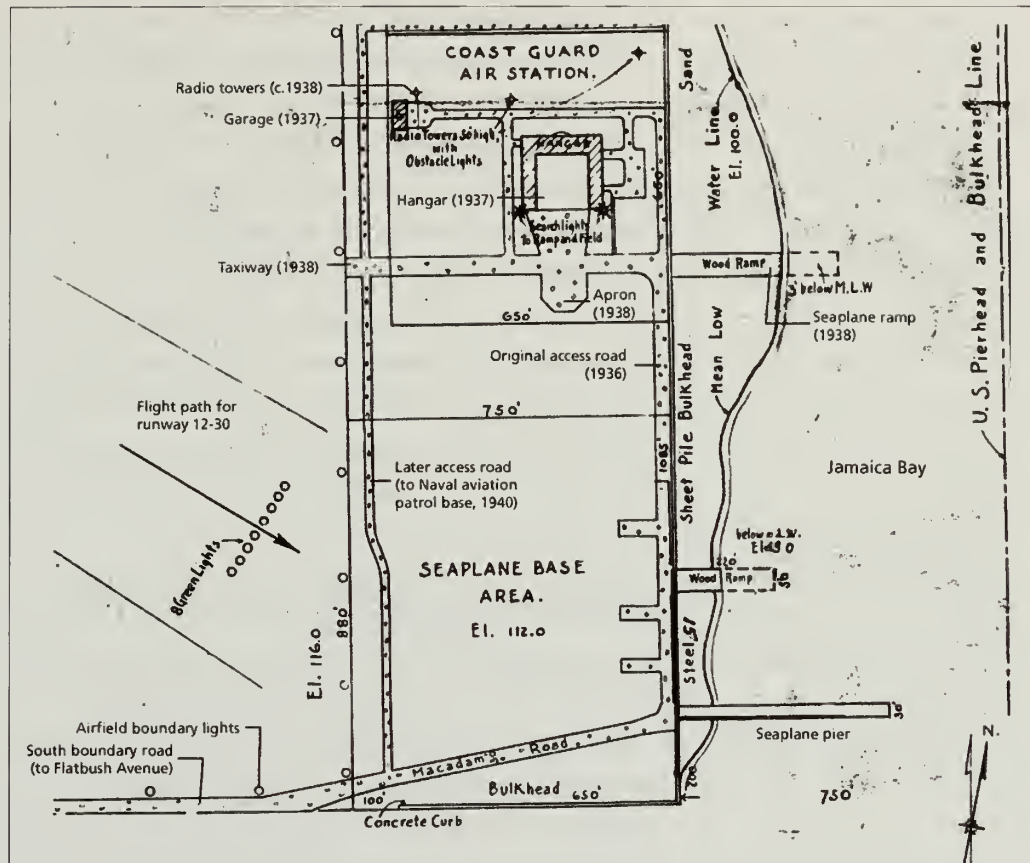
The first Coast Guard air station in the country was commissioned at Cape May, New Jersey in 1926. The creation of the Floyd Bennett facility was part of an expansion of the air station system that began in 1934 under the leadership of aviation-enthusiast Henry Morgenthau, Jr. in his position as Secretary of the Treasury. By 1936 when the lease with the city at Floyd Bennett Field was signed, there were six operational Coast Guard air stations. The new base, named the U.S. Coast Guard Air Station Brooklyn, was intended both as a central base of operations for the eastern seaboard and as a regional base responsible for regulating air and sea traffic between existing air stations at Cape May and Salem, Massachusetts.⁹⁸ The site was located just north of the flight-path for runway 12-30, which was under construction around the time the station was commissioned.

Figure 1.62: View looking east across the Coast Guard Air Station Brooklyn, one year after final completion, 1939. This view shows the hangar with its apron and taxiway connecting to the seaplane ramp on Jamaica Bay. Barely visible at the right edge is the airport seaplane base. (U.S. Coast Guard photograph, reproduced from www.uscg.mil/History/stations/airsta_brooklyn.html.)

Plans for the new air station were publicized in November 1935 and construction was complete within two years of the lease signing in July 1936. Plans called for a large hangar, garage, taxiway, and seaplane ramp extending off the access road to the airport seaplane base. Most of the work was undertaken by private contractors, although the WPA assisted with portions such as construction of the water supply.⁹⁹ After initial work on seeding the sandy soil, construction began on the hangar, located in the center of the site and the garage at the northwest



Figure 1.63: Detail of a map of Floyd Bennett Field updated to June 30, 1941 showing completed Coast Guard Air Station, along with later access road and radio towers north of the hangar. (Uncatalogued drawing, Gateway National Recreation Area Museum Collection, annotated by SUNY ESF.)



corner, both completed in 1937 (figs. 1.62, 1.63). The hangar, which at 161 by 182 feet was substantially larger than the 120 by 140-foot airport hangars, featured an innovative steel-frame barrel vaulted roof with glazed sliding doors facing south, one-story lean-tos on the east and west sides, and a large two-story wing along the north side housing offices and barracks.¹⁰⁰ The hangar was designed in the Moderne style with strong horizontal lines and white-painted concrete walls in stark contrast to the standard architectural style of the earlier airport buildings. Moderne-style details included octagonal projections on the one-story side lean-tos, horizontal parapets, unadorned concrete (stucco) walls, and bands of windows with horizontal divisions. The parapet over the hangar doors featured the Coast Guard insignia in bas-relief, and the parapet over the main entrance on the two-story office wing also featured the insignia but set within stylized wings. On the roof of the hangar was an illuminated north arrow and name "U.S. Coast Guard." The one-story garage matched the style of the hangar with its horizontal massing, white concrete walls, flat roof, and horizontal bands below the parapet.

The Coast Guard air station was outfitted with similar site features as the rest of the airport. These included a concrete apron extending south of the hangar, and a forty-foot wide and 750-foot long concrete taxiway that ran east-west, terminating in a creosoted wood seaplane ramp measuring fifty feet wide and 260 feet long (see figs. 1.62, 1.63). The vehicular drives leading from the access road,

past the north front of the hangar and terminating at the garage were surfaced in macadam. Three thirty-foot radio towers were built in the open area along the north side of the station, probably for ship-to-shore communication. An 8,000 square-foot compass rose, referred to as a calibrating circle, was planned for the site, but never built. Aside from its connection to the south boundary road, the Coast Guard base was a self-contained unit, without any direct access to the airfield runways. Work on the air station was substantially complete by March 3, 1938, when the Coast Guard moved from hangar 4 to the new facility. Coast Guard Air Station Brooklyn was officially commissioned on April 23, 1938.¹⁰¹ Subsequent site improvements included ornamental plantings around the hangar, which incorporated hedge-enclosed lawn panels on the front (north) and east sides of the building, and shade trees along a parking strip to the north.¹⁰²

EXPANDING NAVY PRESENCE: FOURTH CONSTRUCTION PHASE, 1938-1941

With completion of the extensive improvements undertaken with the WPA between 1934 and 1938, the city began to turn its attention toward developing another municipal airport that could attain the commercial traffic that Floyd Bennett Field had failed to attract in its first decade of operation. Despite the millions of dollars spent on the improvements, the remote location of Floyd Bennett Field proved too great of a hindrance to overcome. In contrast, Floyd Bennett Field was proving to be ideal location for military aviation, and as these needs increased in the lead-up to World War II, the Navy began to develop new facilities in 1939 for its exclusive use along the Jamaica Bay shoreline.

Commercial Decline

The city, led by Mayor Fiorello H. LaGuardia, had fought hard over the years to wrest the exclusive airmail contract away from rival Newark Airport in the hopes of making Floyd Bennett Field a commercial success. For LaGuardia, who was elected mayor in 1934, it was not only an economic issue, but also one of pride. His effort traced back to a return flight he and his wife made from Florida aboard a TWA flight in November 1933. The destination on their tickets was listed as New York City, so when the plane landed in Newark, New Jersey, LaGuardia refused to disembark, insisting that Newark was most definitely not New York City. He put up such a fuss that eventually the plane took off and brought LaGuardia and his wife to Floyd Bennett Field.¹⁰³ Despite his determination, LaGuardia had little luck in luring airlines to the city airport. While he succeeded in convincing American Airlines to operate daily commercial service from Floyd Bennett Field to Boston for two years beginning in 1937, the company ceased its service in 1938 after carrying only 1,269 passengers during the year, and closed its ticket counter in the Administration Building on April 30, 1939.¹⁰⁴

After the demolition of the New York Sanitary Utilization Company chimney on March 21, 1937, Mayor LaGuardia shifted his effort to secure the airmail contract to the city's planned second and larger municipal airport. The new 550-acre New York City Municipal Airport #2 at North Beach, later renamed LaGuardia Airport, was estimated to cost over \$46,000,000, compared with the total \$10,500,000 cost of the 380-acre Floyd Bennett Field.¹⁰⁵ Of key importance was the airport's closer proximity to Manhattan compared with its Jamaica Bay counterpart. Located along the north shore of Long Island in Queens, North Beach Airport was along one of the city's new parkways with direct connection to Manhattan via the recently completed Queens-Midtown tunnel. Even before the new airport was built, the city had pledges from five commercial airlines to operate from there. Less than one month after its dedication on October 15, 1939, North Beach Airport received an airmail contract from the Post Office (although the contract was split with Newark Airport), thus sealing the fate of Floyd Bennett Field as a non-commercial airport.¹⁰⁶ While the lack of the air mail contract was critical, ultimately the fault of Floyd Bennett Field was its perceived distance from Manhattan, as a 1939 guide to New York City explained: "Carefully planned to handle a large volume of traffic...Floyd Bennett Field has not been a commercial success because of its distance from the heart of the city."¹⁰⁷

Despite the opening of North Beach Airport and the loss of American Airlines service, Floyd Bennett Field in the late 1930s remained active and a favorite location for record-breaking long-distance flights, such as Howard Hughes' record round-the-globe flight in 1938. The field also was the eastern terminal for all coast-to-coast record flights, and remained a very popular location for sight-seeing tours, which counted over 19,000 passengers in 1939 alone. Over 140 private planes were hangared there that year, a slight increase over the previous year. However, the only true growth at Floyd Bennett Field was in Coast Guard and Naval operations. The year 1939 witnessed more naval aircraft as well as the introduction of permanently stationed Navy and Coast Guard personnel.¹⁰⁸

Development of the Naval Aviation Patrol Base

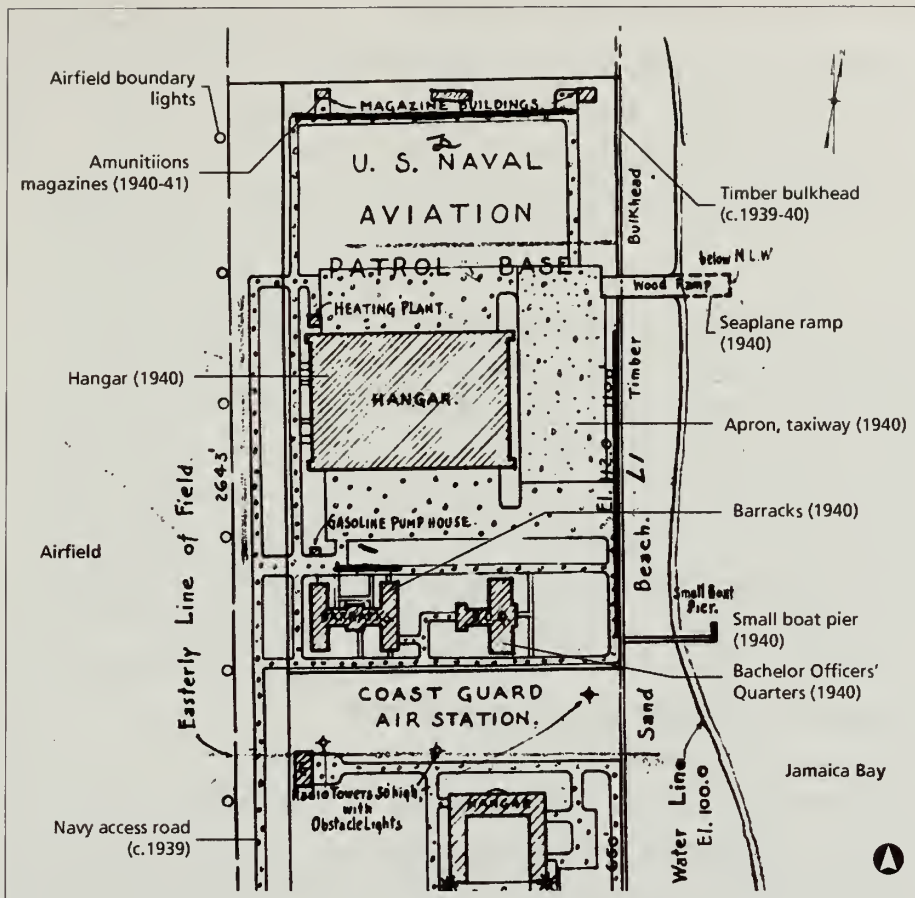
The timing of the opening of North Beach Airport and declining commercial operations at Floyd Bennett Field coincided with a major expansion of naval bases throughout the country in response to growing military threats in Europe and the Pacific. On December 27, 1938, the so-called Hepburn Board made its report to Congress requesting a three-year, \$65,000,000 expansion program for the Navy. Within a year, however, events had escalated and the Navy accelerated its expansion program, which included development at Floyd Bennett Field.¹⁰⁹ On November 27, 1939 following the outbreak of war in Europe and President Roosevelt's resulting proclamation of the Limited National Emergency, the Navy publicized its plans for development of an air base at Floyd Bennett Field that

would house seaplanes used to patrol the coast. Plans for the project, estimated to cost \$600,000, called for two large hangars to house two squadrons with lean-tos to house offices and workshops, storage for ammunition, and barracks for stationing 400 men. At the time, the proposed Floyd Bennett patrol base was one of several in the Navy's expansion program designed, as reported by the *New York Times*, "...with seaplanes keeping watch over the waters of this area to see that no belligerent nation violates the neutrality laws or President Roosevelt's proclamation."¹¹⁰

By the time plans for what was called the U.S. Naval Aviation Patrol Base were made public in November 1939, the Navy had requested ownership of an eighteen-acre plot immediately north of the Coast Guard Air Station. Rather than granting ownership to the Navy, the city adopted a resolution on January 18, 1940 allowing the Navy to lease the area for its new base. The lease, for one dollar per year, stipulated that if the Navy ever ceased use of the facilities, all occupancy and use would be given back to the City of New York. Under the conditions of the lease agreement, the city allowed the Navy to construct several structures necessary for the operation of both boats and seaplanes, including hangars, ramps, bulkheads, docks, and wharves. Although given freedom to design and construct their own facilities, the documents contained a clause limiting the height of hangars and other structures to sixty-seven feet above mean low water; structures whose highest point was above thirty-five feet above mean low water were to be constructed no closer than 700 feet to the existing south side of runway 12-30.¹¹¹

Fig 1.64: Aerial view of Floyd Bennett Field looking southeast showing newly built Naval Aviation Patrol Base on lower left, November 26, 1940. (Photograph 18927, Gateway National Recreation Area Museum Collection.)





Construction on the Naval Aviation Patrol Base began soon after the lease was signed in January 1940. Initial work involved filling and grading what was then open water, beach, and marsh to conform to the adjoining Coast Guard station at an elevation of sixteen feet above mean water level (see fig. 1.62). The Navy constructed a timber bulkhead and filled the area with dredge material pumped from Jamaica Bay. Along the bay side of the bulkhead, a natural sand beach formed as it had along the Coast Guard bulkhead. The main facility at the base was the seaplane hangar, later named Hangar A, a standard Navy design built at other air stations

during the period, such as Naval Air Station Annapolis. The standardized plan may have been designed by the renowned industrial architect, Albert Kahn, who was a consultant to the military during World Wars I and II. Kahn's firm produced many of the designs for naval installations, especially those for air hangars.¹¹²

Although the Navy had planned two hangars at Floyd Bennett Field, it initially built just one, but at approximately 250 feet wide and 400 feet long, it was more than triple the size of the Coast Guard hangar and more than five times as big as the airport hangars (figs. 1.64, 1.65). Built of a clear-span trussed steel frame with angled skylights, sliding glazed doors on the north and south sides, and narrow one-story lean-tos on the other ends, the hangar was reported to cost \$600,000 and was designed to house the patrol squadron's twelve PBY flying boats (PB = "Patrol Bomber", and "Y" the code for "Consolidated Aircraft"). These seaplanes, introduced to the Navy in 1936, were designed to carry bombs, torpedoes, and machine guns.¹¹³ Unlike the Coast Guard and airport hangars, the new Navy hangar was a strictly utilitarian structure without architectural adornment.

As with the Coast Guard Air Station, the Navy patrol base included a number of other buildings, structures, and circulation features that were largely completed

by November 1940 (see figs. 1.64, 1.65). Along the east side of the hangar was a concrete apron that extended to the bulkhead along Jamaica Bay. At the north end of the apron, there was a wood seaplane ramp, and at the south end, a wood pier for small boats. The base was accessed on land by a new road that ran north from the airport's south boundary road, through the airport seaplane base and Coast Guard Air Station, parallel to the airfield. As with both of these other facilities, there was no direct access to the runways on the airfield. North of the hangar, there was a small heating plant close to the building, and a large rectangular open area framed by roads that may have been intended as the site of the planned second hangar. Along the north boundary of the base was a row of three ammunition magazine buildings, one of which was underground. South of the hangar bordering the Coast Guard Air Station, the Navy constructed two wood-frame barracks with gable roofs and white-painted clapboard siding. The larger building, forming an "H" in plan, was probably for enlisted men, and the other building, forming a "T" in plan, was bachelor officers' quarters. These two buildings were connected to the main access road and apron by an orthogonal system of roads and walks, probably paved in asphalt.¹¹⁴

Expansion of the Naval Reserve Aviation Base

As construction of the Naval Aviation Patrol Base was underway in 1940, the Navy began to make plans for expanding its operations in hangars 1 and 2 at Hangar Row, which housed the Naval Reserve Aviation Base. This was part of a program that the Navy began in the fall of 1940 to improve its primary flight training facilities during the national emergency.¹¹⁵ At Floyd Bennett Field, plans called for creating housing and other support buildings at the location of the airport maintenance area at the south end of Hangar Row. By the spring of 1941, the Navy began demolition on the sheet-metal and wood-frame garages and pump stations in the maintenance area east of the Dope Shop in preparation of construction of a large, two-story "H"-plan frame barracks estimated to cost \$100,000. This new building would be the same design as the barracks at the patrol base along Jamaica Bay with white-painted clapboard siding, gabled roofs, and six-over-six double-hung sash windows. It was intended to provide a mess hall and housing for one hundred reserve student pilots.¹¹⁶

LANDSCAPE CHARACTERISTICS, 1941 (DRAWING 1.2)

Municipal operation of Floyd Bennett Field came to a halt in May 1941. In its more than a decade of operation as New York City's first municipal airport, Floyd Bennett Field had gained wide renown as a symbol of the possibilities of flight despite its lack of commercial success. Decades later, the *New York Times* reflected:

In the drab days of the Depression, the words Floyd Bennett Field were magic to millions around the country and the world. The names of the aviators operating from the field—Amelia Earhart, Wrong Way Corrigan, Col. Roscoe Turner, Gen. Italo Balbo of Italy and Jacqueline Cochran—conjured up images of daring flights that advanced aviation beyond its infancy and lifted men's hopes for better days. One of the most notable of the flights was Wiley Post's first solo trip around the world, which started and ended at Floyd Bennett in July, 1933.¹¹⁷

The following description of the site, organized by landscape characteristics, provides an overview of the landscape in 1941 on the eve of the transformation of Floyd Bennett Field into the U.S. Naval Air Station, New York. At this time, the landscape corresponding with the current site of Floyd Bennett Field consisted of three different areas. To the south was Barren Island, including the remnant community and extensive areas of cleared land consisting of scattered trees and sand dunes. In the middle was the airport, a large area of filled land with its row of buildings along Flatbush Avenue, expansive open airfield with concrete runways, and the line of buildings along Jamaica Bay belonging to the Naval Aviation Patrol Base and the Coast Guard Air Station, Brooklyn. North of the airport extending to Mill Basin and the recently completed Shore Parkway was another large open expanse consisting of recently filled land and remnants of the tidal estuary that existed prior to the airport's development in 1928. The site was bordered along its west side by Flatbush Avenue, renamed Marine Parkway and extended over Rockaway Inlet across the Marine Parkway Bridge to Jacob Riis Park.

Natural Systems and Features

In 1941, a large portion of the Floyd Bennett Field landscape consisted of engineered fill, with most of the native tidal estuary removed or significantly altered. Remnants of John's Point Marsh remained along the Jamaica Bay waterfront north of the Naval Aviation Patrol Base, and fragments of Riches Meadows remained between the airport and Shore Parkway. The only remnant tidal creeks within the site were Irish Channel, which extended from Mill Basin south through the undeveloped area north of the airport, and the unnamed creek that ran north from Rockaway Inlet through the middle of Barren Island. Natural

sand beach, which was replenished by wave and tidal forces, existed along much of the Jamaica Bay shoreline along newly developed areas lined by bulkheads.

Spatial Organization

While most of the Floyd Bennett Field landscape was an open expanse in 1941, there were a number of distinct spaces within the landscape formed by buildings and vegetation. Within the airport, the airfield was delineated by Hangar Row on the west, the Naval Aviation Patrol Base and Coast Guard buildings on the east along Jamaica Bay, and remnant trees and buildings to the south on Barren Island. To the north, the airfield was open to the remnant estuary and filled land extending to Mill Basin. Secondary spaces were formed by large buildings, notably the airport entrance framed by the Administration Building and hangars to either side. On Barren Island, the remnant buildings at the east end of Main Street continued to define a linear corridor, although much less defined than earlier due to building demolition.

Land Use

Throughout this period, Floyd Bennett Field was primarily used for aviation and aviation-related services, with secondary or remnant residential uses on Barren Island south of the airport. While the city had hoped that commercial passenger aviation would be the dominant use for the airport, by 1941 these plans had disappeared with the securing of the airmail contract at the city's second municipal airport, North Beach (LaGuardia) Airport, in 1938. Despite the loss of commercial passenger service, there remained several commercial ventures at the airport in c.1941, including a barber shop, photography business, and restaurant in the Administration Building, several flying schools, sightseeing lines, and six fuel companies.¹¹⁸ The New York City Police Department Aviation Unit also operated at the airport out of Hangar Row. The primary aviation uses at Floyd Bennett Field, however, were military. The Coast Guard operated its Air Station along Jamaica Bay with its fleet of seaplanes that monitored the commercial activities of the surrounding waters. The Air Station also included barracks and offices. The Navy maintained a Reserve Aviation Base on Hangar Row and its recently completed Naval Aviation Patrol Base along Jamaica Bay, which patrolled the coast for enemy craft and also contained two barracks.

Cluster Arrangement

The Floyd Bennett Field landscape contained three distinct clusters of development in 1941. The most conspicuous was Hangar Row, with its four large hangars, Administration Building, and numerous support buildings lining Flatbush Avenue, bordering the flight-path clear zone for runway 15-33. At the

opposite end of the field along Jamaica Bay was the second major cluster formed by the Naval Aviation Patrol Base and the Coast Guard Air Station, located north of the flight-path clear zone for runway 12-30. The airport seaplane base area was south of the Coast Guard air station within the flight path of runway 12-30. Apparently due to lack of commercial seaplane traffic and the construction of runway 12-30 in 1936, this area contained no buildings as originally planned, although it did have a pier and seaplane ramp. The third cluster was the remnant community at the southeastern end of Barren Island. By 1941, this cluster consisted of only a scattering of small houses plus the larger Sacred Heart Church and rectory along the north of side of Main Street.

Topography

The topography of Floyd Bennett Field in 1941 was largely the result of extensive filling operations undertaken in 1928 and 1929 that raised 387 acres of the former estuary to a level terrace measuring sixteen feet above the mean low tide or twelve feet above sea level. This terrace was supported by steel sheet-pile bulkheading along the southern and eastern edges of the airfield. The area of fill by 1941 also included the latter development of the Naval Aviation Patrol Base, which extended the sixteen-foot high terrace farther north and east along Jamaica Bay. The Naval Aviation Patrol Base fill was supported by timber rather than steel sheet pile bulkheading. The topography north of the airport reflected ongoing filling that had raised much of the approximately 472 acres in this area to dry ground, although one creek and several large areas of wetlands remained. South of the airport, Barren Island retained the topography that existed prior to development of the airport, although some filling occurred along its northern boundary where the pre-existing grade transitioned to the sixteen-foot elevation of the airfield. The airport bulkheading was clearly visible at the east end of the island, where it formed a high wall upwards of fourteen feet tall where Barren Island sloped down toward the beach along Jamaica Bay.

Vegetation

The dominant vegetation (managed plant material) of the Floyd Bennett Field landscape in 1941 was the airfield turf, which covered hundreds of acres with closely-shorn grasses necessary to stabilize the top soil and underlying sandy base. This turf also served as a secondary landing area for planes. The species composition of the grasses is not known. Similar turf covered the grounds of the airport seaplane base and Coast Guard Air Station.

A neatly maintained ornamental lawn, of a finer and denser character than the airfield turf, covered the grounds within the airport entrance between the Administration Building and Flatbush Avenue. This area was designed for flight-

leery passengers as a park-like landscape meant as a comforting atmosphere that reflected the landscape character of the state park and parkway system then being developed in the region. Here were located ornamental plantings that included clipped privet hedges lining the axial entrance drives, and a variety of shrubs including foundation plantings around the Administration Building. Flower beds were designed along the front of the building as well. According to plans developed by the Department of Docks in 1935, plant species were to include privet, juniper, spirea, lilac, forsythia, rose-of-sharon, roses, cannas, hydrangea, azaleas, vinca, and ivy, among others. It is not known if these were all planted. The central walk was lined by sycamore trees, which tied into the sycamore street trees along Marine Parkway (Flatbush Avenue). The grounds immediately surrounding the Coast Guard Air Station hangar were also ornamented with lawn and shrubs. These included clipped hedges that framed lawn panels on the north front and west sides, and specimen trees.¹¹⁹

South of the airport, vegetation within Barren Island included specimens and groves of deciduous trees, and probably some garden plots at the remaining houses on the east end of the island. The trees within the west end of the island were apparently retained during the demolition of the buildings in 1936-37.

Circulation

The dominant circulation of the Floyd Bennett Field landscape in 1941 consisted of the four runways, two perpendicular ones constructed during the initial development of the airport in 1929-30, and two diagonal runways added in 1935. Each runway was designated by cardinal directions according to standard airport nomenclature. Runway 12-30, added in 1935, was equipped with landing lights as a blind landing runway for use at nighttime and in inclement weather. Each runway was also equipped with a row of green end of runway lights. The runways were connected to Hangar Row by three short taxiways, which led to the apron that ran along the east side of Hangar Row. The apron served as a parking area for planes. The portion of the apron in front of the Administration Building, where four rotating platforms and passenger tunnel hatches were located, served as the passenger loading area. All of the runways, taxiways, and the Hangar Row apron were built of reinforced concrete. The portion of the apron surrounding each hangar was surfaced in black asphalt block pavers, designed for the movement of planes and vehicles.

Circulation within the airport entrance area, completed in 1935, included two diagonal concrete drives off Flatbush Avenue, one designated for two-way traffic, the other one-way. These drives featured concrete curbs and terminated at a central forecourt used as a parking area and paved in black asphalt blocks. The drives were lined to either side by concrete walks, which connected to a

central walk that ran through the central lawn on axis with the entrance of the Administration Building. This walk formed a circle around the airport flagpole and sign. The drives also provided access to the two gravel-surfaced public parking lots, one north of the Administration Building, the other to the south. Two additional gravel-surfaced parking lots were located at the north end of Hangar Row. These were probably intended for overflow parking during major events.

Vehicular access to the facilities on Jamaica Bay was by a narrow paved road that ran along the south boundary of the airport, extending from Flatbush Avenue east to the airport seaplane patrol base. An unpaved service road also ran along the north and east boundaries of the airfield. At the seaplane base, the south boundary road turned north along the bulkhead to access the pier and ramp used by seaplanes, as well as three seaplane parking slots. The road continued north to Coast Guard Air Station, where it provided access to the hangar and garage. The air station featured its own concrete taxiway and apron, which extended to a wood seaplane ramp. Another road ran north from the south boundary road toward the Naval Aviation Patrol Base, where it led to the facility's hangar, apron, seaplane ramp, and small boat pier. A road ran around the perimeter of the patrol base to access the two barracks along the south side and ammunitions magazines along the north. Associated with these three facilities were one or more seaplane runways in Jamaica Bay. Runway 18-36, probably the original runway, ran north-south along Island Channel and featured a turning basin at its south end in Rockaway Inlet. The other two runways were located to the east.

On Barren Island, Main Street remained the primary circulation feature, linking the remnant community on the east end of the island with Flatbush Avenue. Portions of the roads and walks within the western part of the island cleared by the city may have remained in 1941.

Buildings and Structures

Within the municipal airport, the Floyd Bennett Field landscape was characterized in 1941 by buildings with a unified architectural style. All permanent buildings with two exceptions were designed in an Art Deco style with stylized neoclassical details, using buff-colored tapestry brick, cast-stone details, flat parapeted roofs, and steel windows and doors. This style, used on the large hangars down to the small Sperry floodlight towers and transformer vaults, reflected the modern use of the buildings for aviation. The most elaborate buildings were the four groups of paired hangars, which featured trussed steel structures that provided enormous interior clear-spans, with lean-tos for offices and workspace to either side and later infill buildings that spanned each pair. Aside from several temporary frame and sheet-metal maintenance buildings at the south end of Hangar Row, the only buildings that departed from the airport style were the Administration

Building and Field House, the latter a sort of outbuilding to the Administration Building housing restrooms and concessionaires. Both were designed in a conservative neoclassical style using red brick, double-hung and multi-paned casement windows, marble, and cast-stone. This design reflected the style of traditional public buildings and provided a comforting appearance to passengers apprehensive of flying.

The hangar and garage at the Coast Guard Air Station had their own distinct architecture using the Moderne style with white-painted concrete walls, horizontal bands of windows, and parapeted flat roofs. The hangar, substantially larger than those in Hangar Row, featured a barrel vault framed on three sides by lean-tos housing offices and repair shops. The air station also featured three thirty-foot radio towers positioned along the north side of the facility.

In contrast to the airport and Coast Guard buildings, buildings constructed by the Navy were utilitarian, reflecting the near-wartime conditions under which they were built. They were also standardized designs employed at other Navy bases throughout the country. The most prominent Navy building at Floyd Bennett Field was the hangar (later Hangar A) at the Aviation Patrol Base, an enormous steel-trussed structure with an interior clear span nearly five times the size of the airport hangars. The exterior featured skylights and was simply sheathed in glass and metal, with sliding doors that ran on tracks in the floor. Secondary buildings constructed by the Navy, including two barracks at the patrol base and a barracks under construction as part of the Naval Reserve Aviation Base at the south end of Hangar Row, were simple wood-frame structures with white-painted clapboard siding, gable roofs, and six-over-six double-hung sash windows.

South of the airport on Barren Island, there were approximately twenty-four buildings left in 1941, plus foundations from the New York Sanitary Utilization Company and White fertilizer factory, on private property belonging to Thomas F. White and his associated company. These remnant buildings included small houses and Sacred Heart Church and Rectory, owned by the Roman Catholic Diocese of Long Island. There were also remnants of docks and wharfs lining the shore of Rockaway Inlet and Jamaica Bay. All buildings and structures on the west end of the island, located on city-owned property, had been cleared by the city in 1936-37 in preparation for redevelopment as part of Brooklyn Marine Park.

Views and Vistas

The Floyd Bennett Field landscape was characterized in 1941 by expansive, panoramic views that were critical to its use as an airport. The expansiveness of these views was due not only to level topography and lack of tree cover, but also the wide expanses of open water and low-lying estuary in the surrounding area.

Within the airport, clear zones were maintained at either end of the runways to maintain open sight lines and prevent obstructions. It was for this reason that the city demolished the tall chimney on Barren Island belonging to the New York Sanitary Utilization Company. The airport also had open panoramic views to the north across the undeveloped tract originally planned as a dirigible landing field. To the east, west, and south, views were limited in part by buildings in Hangar Row and along Jamaica Bay, and by tree-cover on Barren Island. The Manhattan skyline could be seen from the roof of the Administration Building.

Small-Scale Features

There were a variety of small-scale features in the Floyd Bennett Field landscape in 1941. Within the airfield, these included a system of runway and boundary lights, some or all of which were mounted on metal bases in the shape of cones (see fig. 1.45). The north and south sides of the field were lined by wood and wire fences intended in part to act as traps to prevent sand from blowing onto the field. Within Hangar Row and the airport entrance area, small-scale features included several fences, such as a cyclone fence that separated the passenger loading area on the apron from the passenger drop-off area along the east side of the Administration Building. This fence featured a number of gates that led to awaiting planes ready for boarding. These gates were marked by pipe-frame arches containing the airline name and flight information. Other fences within this area separated the main parking lots within the entrance area from the gate area and hangars. Within the entrance area, small-scale features enhanced the park-like quality of the landscape. These included two cast-iron light standards marking the head of the central walk, two rustic wood light standards near the entry drives, and a steel flagpole and rustic wood sign within the circle in the central walk. This sign featured a signboard set within a wood pavilion with a shingled gable roof.

Within Barren Island, there remained a number of small-scale features in the remnant east end of the island, including fences and utility poles. All small-scale features in the west end of the island had most likely been removed by the city in 1936-37 in preparation for redevelopment as Brooklyn Marine Park.

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- 3 "Jamaica Bay to be a Great World Harbor."

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- 19 Kaufman, 150.
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- 25 "Floyd Bennett Field Grows from Sand Waste," *New York Times*, 20 July 1930, Special Features Section, 6.

- 26 Kaufman, *Gotham in the Air Age*, 150.
- 27 Blakemore and Linck, 26, 29.
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- 33 "Belt Parkway Historic Overview."
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- 37 Sheri Olson, Review of exhibit "Building for Air Travel: Architecture and Design for Commercial Aviation," in *Journal of the Society of Architectural Historians*, vol. 56, no. 4 (December 1997), 496.
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- 44 The runway numbers refer to the cardinal magnetic direction from either takeoff or landing, measured clockwise from north and rounded off with the last digit dropped. The second number is always reciprocal, meaning it is 180 degrees from the lower number. Runway 15-33 is thus 150 degrees from the north/east, 330 degrees from the south/west. If the plane is landing on the northeast end of the runway, it is using runway 15; on the southwest end, runway 33.
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- 46 Blakemore and Linck, 79.
- 47 Blakemore and Linck, 93. When construction began in 1929, the Department of Docks did not have enough money to build runways 100 feet wide; however, once the project was underway, the department realized the price to modify the runways was not as expensive as they had initially estimated.
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Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

Municipal Airport Period 1928-1941



National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

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2. USGS, Coney Island quadrangle, 1939
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DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

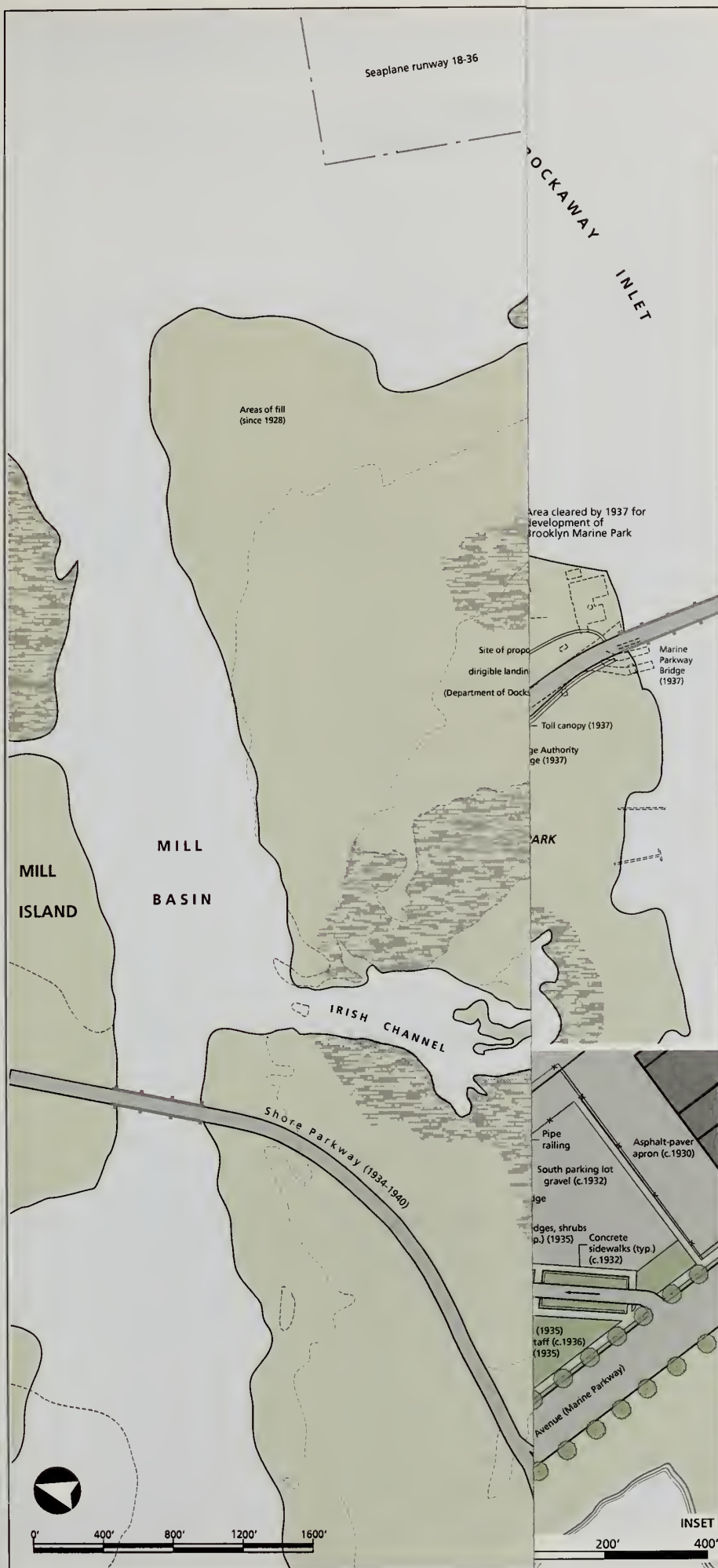
LEGEND

- Property, lease boundary
- Building or structure
- Paved, unpaved vehicular circulation
- Sidewalk
- Fence, light
- Woods, specimen tree
- Managed turf/lawn
- Upland/fill, low scrub
- Marsh
- Open water
- Site of feature removed since 1928
- (1935) Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1928 not dated.
3. Vegetation unknown except where indicated.
4. Plan shows conditions at end of period in 1941.
5. Buildings and structures not numbered during period.

Drawing 1.2



Drawing 1.2



FLOYD BENNETT FIELD IN WORLD WAR II: NAS NEW YORK, 1941-1945

By the spring of 1941, it was clear that the future of Floyd Bennett Field was as a military base, not as a commercial airport. The Navy's construction of its Aviation Patrol Base along Jamaica Bay in 1940 and expansion of the Naval Aviation Reserve Base at the south end of Hangar Row begun in early 1941 were clear indications of this future. With the continuing national emergency and increasing likelihood of U.S. involvement in World War II, there was little the city could do to halt the complete military transformation of Floyd Bennett Field. On June 2, 1941, New York City Municipal Airport #1, Floyd Bennett Field, was officially redesignated Naval Air Station, New York, N.Y (NAS New York).

With the United States' declaration of war following the attack on Pearl Harbor on December 7, 1941, the Navy began a massive expansion of Floyd Bennett Field. Within the original airport property, the Navy enlarged the airfield north into the area originally designated as a dirigible landing field, built a new maintenance complex on the east side of the airfield, and expanded Hangar Row and the Aviation Patrol Base. The most substantial change occurred on Barren Island, where the Navy demolished all remnants of the community and expanded the land out into Rockaway Inlet and Jamaica Bay for construction of two barracks areas, a seaplane base, and a wharf. To the north of the airport, the Navy filled in the remnants of the tidal estuary and developed an ammunitions-communications area with radio towers and high-explosive magazines. Despite the extensive redevelopment, the Navy retained much of the original municipal infrastructure of Floyd Bennett Field and the open, expansive character of the landscape.

NAVY ACQUISITION OF FLOYD BENNETT FIELD

The Navy's formal interest in acquiring Floyd Bennett Field traces back to 1939 as part of its establishment of the Naval Aviation Patrol Base along Jamaica Bay. On November 24, 1939, Navy officials held an initial meeting with Mayor LaGuardia regarding the proposal for transforming the entire field into a naval air station. LaGuardia was hesitant to give up the airport despite its lack of commercial activity, but ultimately realized the urgent need for the naval air station during the national emergency and with the likelihood of war. LaGuardia insisted at the meeting that if the city were to sell the property, it would not be without considerable cost to the Navy. LaGuardia at first felt that the cost should be equal to the city's financial contribution to the joint city-WPA improvements undertaken during the mid-1930s, which he claimed totaled approximately \$6 million. He also made clear that if the United States held title to the field, the city would retain the right to land commercial aircraft in the event of emergency or over-crowded conditions at North Beach (LaGuardia) Airport.¹ After this initial

meeting, the Navy did not immediately move to purchase the airport, giving Mayor LaGuardia time to reconsider his proposal.

By the summer of 1940 as construction of the Naval Aviation Patrol Base was underway, word had spread of the Navy's possible takeover of the municipal airport. In August of that year, the *New York Times* published an editorial that, recognizing the commercial failure of the airport, stated "...purchase of that field by the Navy is 'in the wind.' It may well be a wind that will blow good to both the city and the defense program."² With the Navy enjoying public support for the military conversion and the city trying to preserve its investment, negotiations dragged on over the course of the following year into the late spring of 1941. During this time, the Navy continued to both assess the potential of Floyd Bennett Field as a naval air station, and explore alternate sites for development of a completely new facility elsewhere in the New York City area.

To assist in making sure Floyd Bennett Field was a suitable site for a naval air station, the Navy conducted a security survey in February and March of 1941. On the positive side, this survey identified the Navy's existing presence and newly-developed infrastructure at Floyd Bennett Field, including the only Naval Reserve Aviation Base in the Third Naval District. On the negative side, the security survey identified the conflict between naval and civilian flight patterns which made for what was assessed as deplorable flying conditions. The survey stressed that it was "...imperative for the safety of life and equipment that either the entire field be taken over by the Navy or that all Navy activities be withdrawn and a new base developed."³ Under city ownership of the field, the Navy only had direct control over the Aviation Patrol Base. This meant they could not control any other site facilities or access. The survey stressed that being in such close proximity to civilian hangars was unsafe; the civilian aircraft operated with different flight paths and there had already been at least two fatal collisions between civilian and naval aircraft.⁴

Soon after the security survey had been completed in the spring of 1941, the city, having previously negotiated for sale of the airport and adjoining city lands, offered instead to lease the property to the Navy for eight years. This was a similar arrangement the city had worked out with the Navy for the Aviation Patrol Base the previous year. The *New York Times* reported that Mayor LaGuardia preferred this arrangement because "...sale of the airport would mean its control by the [federal] government in perpetuity, while a lease would enable the city to get it back after the emergency to aid commercial aviation."⁵ Under this offer, the city maintained its lease with the Coast Guard. The Navy accepted the city's lease offer as an interim measure and Floyd Bennett Field, New York City Municipal Airport #1, was closed to commercial traffic on May 26, 1941.⁶ One week later,



Figure 1.66: View looking southwest at the audience gathered on the apron (former airport gate area) for the official dedication ceremony of Naval Air Station, New York on June 2, 1941. Hangars 3 and 4 are visible in the background with "U.S. Navy" on their parapets. (Photograph 18949, Gateway National Recreation Area Museum Collection.)

on June 2, 1941, the Navy opened Naval Air Station, New York with approximately 50,000 people in attendance at the commissioning ceremony held on the former gate area adjoining the Administration Building.⁷ (fig. 1.66) Over the course of the next eight months, the Navy operated out of the existing leased city facilities while it made plans for the establishment of a permanent air station, either at Floyd Bennett Field or at another site in the New York City area.

By November 1941 after six months of searching for alternative sites following the dedication, no other site had been found and the Navy determined Floyd Bennett Field to

be the only suitable location for its New York air station.⁸ With the declaration of war following the attack on Pearl Harbor on December 7, 1941, the Navy quickly moved forward with its plans to acquire Floyd Bennett Field plus a large amount of surrounding land from the city and private owners for development of the naval air station. The entire property, amounting to over 1,280 acres (including some land under water), was documented on a survey completed on December 29, 1941 (fig. 1.67) The survey identified three major areas for acquisition: the airport and the undeveloped city-owned land to the north, totaling 993 acres, plus the sixteen-acre tract leased to the Coast Guard and the eighteen-acre Aviation Patrol Base leased to the Navy; a city-owned 171-acre tract to the south of the airport on Barren Island intended for development as part of Brooklyn Marine Park; and three privately owned tracts totaling ninety-two acres at the east end of Barren Island that contained remnants of the Barren Island community. At the time of the survey, the private property was owned by Thomas F. White Company (doing business as Barile Development Corporation), the New York Sanitary Utilization Company, and the Roman Catholic Diocese of Long Island. The amount of area surveyed included potential filling out to the 1911 pierhead and bulkhead line.⁹ In total, these acquisitions would give the Navy control over all land east of Flatbush Avenue from the Shore Parkway and Mill Basin south to Rockaway Inlet.

By the time the property survey was complete in December 1941, the city was asking \$15 million for Floyd Bennett Field, more than double its earlier price of \$6 million.¹⁰ Mayor LaGuardia felt this higher price was considerably less than the actual value of the site. Offering the airport at such a price, LaGuardia insisted, was "...not only a sacrifice, but a direct contribution [to the war effort] because of [the city's] desire to be helpful in every way to the government and

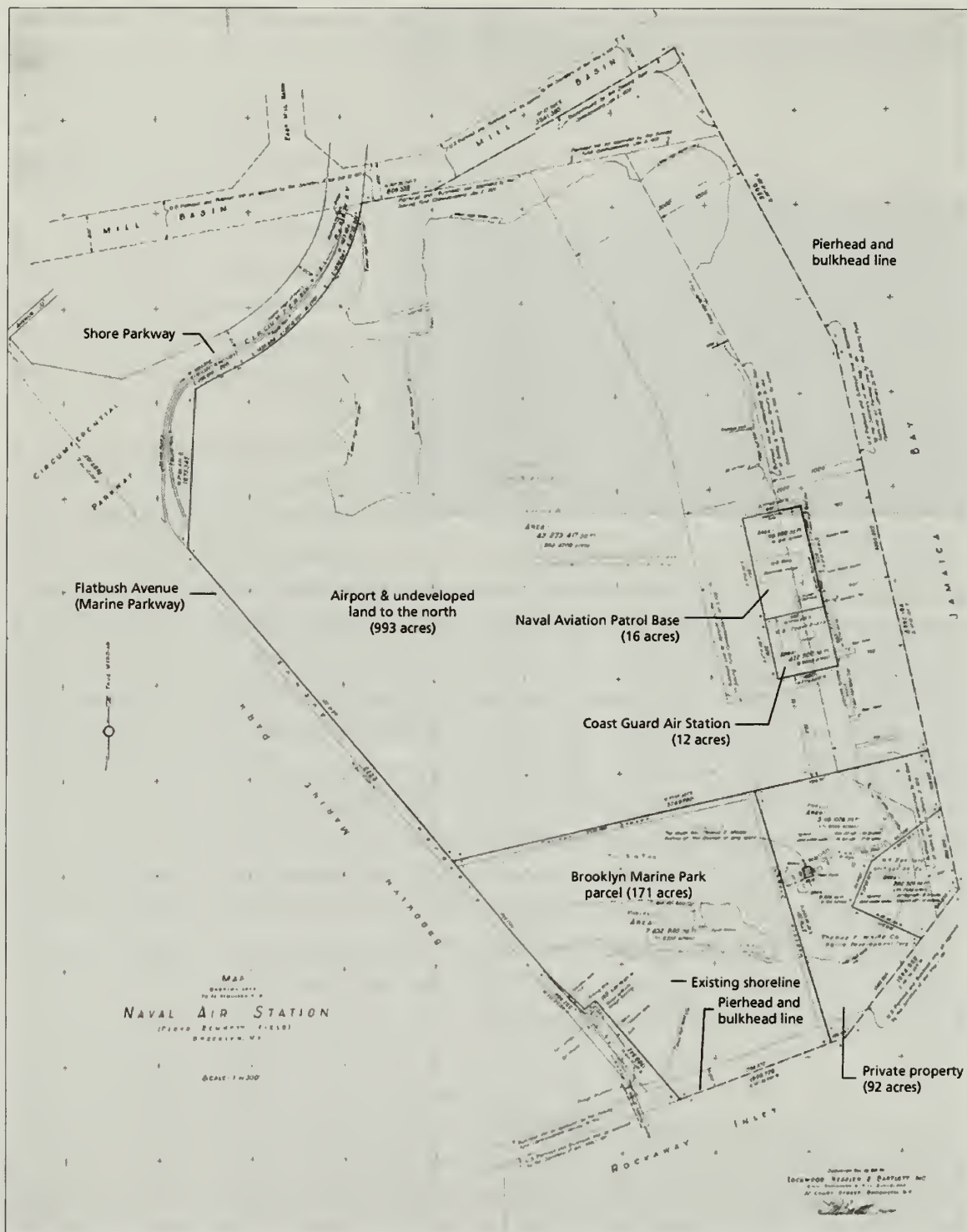


Figure 1.67: Property survey entitled "Map Showing Land to be Acquired for Naval Air Station (Floyd Bennett Field), Brooklyn, N. Y.," surveyed December 29, 1941. The Coast Guard Air Station was previously recorded as ten acres. (RG 71, National Archives II, annotated by SUNY ESF.)

the United States Navy in any matter in which national defense [was] involved."¹¹ The Navy believed the city's asking price was unjustified and instead calculated an assessment based on 1,047 acres of upland, valued at almost \$6 million, and \$3.5 million worth of improvements, totaling \$9.5 million. However, once the Navy considered costs already born by the federal government, such as the Coast Guard facilities and WPA improvements, the total was actually just over \$8.5 million. The Navy Department decided to offer the city \$8.75 million.¹²

As these negotiations were going on, the Navy had completed condemnation proceedings by January 1942 for the private land on the eastern end of Barren Island, and had apparently also worked out an arrangement with the city to acquire the adjoining city-owned land intended for redevelopment as Brooklyn Marine Park. The Navy was unable to convince the city to give up the park land across Flatbush Avenue from the airport.¹³

With disagreement over acquisition cost for the airport proper, city and naval officials met in Washington, D.C. in January 1942 to discuss transferring ownership of the airfield through “friendly condemnation proceedings.”¹⁴ The condemnation proceedings led the Navy to file a declaration of taking on February 9, 1942. This document gave immediate possession of the entire airport property as well as the undeveloped city land to the north to the Navy at a slightly higher price of \$9.25 million for approximately 942 acres.¹⁵ All prior city leases were terminated, except for the Coast Guard lease, which the Navy continued with the provision that the Coast Guard not interfere with any naval operations.¹⁶ Together with the land on Barren Island, the Navy had secured ownership of the land that would be redeveloped over the following two years into NAS New York.

WAR-TIME FUNCTION OF FLOYD BENNETT FIELD

The physical expansion of Floyd Bennett Field into NAS New York was undertaken to fulfill the site’s role as one of the most important naval installations and military airports in the World War II home front. Although the Navy had utilized aircraft during World War I, as evidenced by its Rockaway air station, it was during World War II that the Navy’s air power came into its own. As Navy historians published soon after the war’s end, “During a war which saw the aircraft carrier assume at least equal importance with the battleship in fleet operation, the air station took its place with the navy yard, the training center, and other important shore units as an indispensable and major element of the Navy.”¹⁷ In 1938 prior to the national emergency and declaration of war, the Navy maintained seven Naval Air Stations—the flagship type of naval air facility—and ten Naval Reserve Aviation Bases, including the one at Floyd Bennett Field. During the war, these numbers rose to 257 air stations, of which eighty-six were in the East, and many smaller, satellite fields.¹⁸ NAS New York served as the main air stations for the New York City area, with the primary Navy installation at the New York Navy Yard located on the East River in Brooklyn, a facility dating back to 1801. The largest naval air station on the East Coast was NAS Quonset Point, Rhode Island, a facility built between 1940 and 1941.¹⁹



Figure 1.68: A WAVES (Women Accepted for Volunteer Emergency Service) squadron on parade at the apron and former gate area in front of the Administration Building, July 29, 1944. WAVES supported many of the non-combat units at the naval air station. (Photograph 237615, Still Pictures Unit, National Archives II.)

At the time NAS New York was commissioned on June 2, 1941, there were just six officers and twenty-four enlisted men at Floyd Bennett Field. After Pearl Harbor, work began on developing facilities to accommodate 6,500 personnel.²⁰ By 1944, there were 897 officers, 3,101 enlisted personnel, and 740 civilians at NAS New York, including detachments of Women Accepted into Volunteer Service (WAVES).²¹ (fig. 1.68) These people ran numerous units and departments within the naval air station.

In its enlarged military role, the primary function of NAS New York, as recorded in a 1944 Navy publication, was "...to provide base facilities for the Fleet and the North Atlantic Naval Frontier, and to assemble, service, equip, and deliver naval aircraft from factory to fleet."²² This latter function was directly related to the concentration of aircraft manufacturing plants in the New York City area, including Grumman, General Motors, and Vought-Sikorsky. The function was carried out by the Aircraft Commissioning Unit, which handled the receipt, equipping, and checking of hundreds of naval aircraft per month from eastern factories. By the end of the war, some 46,000 aircraft had been commissioned at NAS New York and then delivered to fight in the major battles, primarily in the Pacific.²³ The shipment of planes was carried out by the Navy's Aircraft Delivery Unit (later renamed the Naval Air Ferry Command), which was headquartered at Floyd Bennett Field as the eastern terminal. Together with a similar facility at

Columbus, Ohio, the delivery system followed several ferry routes across the country, terminating at NAS San Diego (fig. 1.69)

The location of Floyd Bennett Field at the country's largest city, with access to key commercial areas and ample labor pools, also was

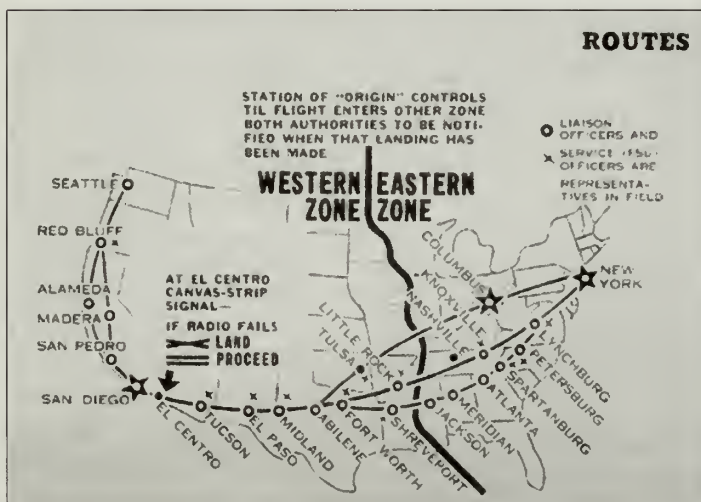


Figure 1.69: World War II-era map of the primary ferry routes of the Navy's Aircraft Delivery Unit (later Naval Air Ferry Command) headquartered at Floyd Bennett Field (identified as "New York" on the map), c.1943. (Reproduced from The Floyd Bennett Field Task Force, "Aircraft Delivery Unit 1941-43" webpage, <http://kerrdrill.tripod.com/id4.html>.)

a reason for its designation as a key base for servicing allied aircraft and shipping supplies both to the European and Pacific fronts. In December 1943, NAS New York became the eastern terminal of the Military Air Transport Service, which operated on average 720 transcontinental flights a month involving more than 5,000 passengers and more than a million pounds of cargo.²⁴ Floyd Bennett Field also continued and expanded its role as a major base for training pilots and for patrolling the Atlantic sea lanes. During the war, the Navy increased the size of the Aviation Patrol Base on Jamaica Bay to six patrol squadrons and one inshore patrol squadron.²⁵

Several units at NAS New York carried out the daily service functions necessary to support a massive military base. These included the Public Works Department; Fire and Safety Engineering; Station Intelligence and Security; Supply, Commissary, and Disbursing; Medical and Dental; and Communications units. In addition to these, there was the Gunnery Department, which managed the field's stores of ammunitions; the Operations Department, consisting of a Flight Division which administered all station aircraft, an Aerological Division which handled weather forecasts, and a Boats Division which managed aquatic functions; and lastly, the Training Department, which conducted flight and ammunitions courses for officers and enlisted men. The Naval Reserve Aviation Base in Hangar Row had been discontinued as a separate naval unit shortly after NAS New York was commissioned.²⁶

NAS New York also functioned as part of a system of military installations in the area that included the Coast Guard Air Station Brooklyn (which came under the control of the Navy during the war), as well as the air corps at nearby Mitchell Field on Long Island and the Army's anti-aircraft harbor defense at Fort Tilden just across the Rockaway Inlet. The commander of NAS New York was also responsible for two auxiliary naval airfields (NAF): NAF Roosevelt Field in Mineola, Long Island and NAF Mercer Field in Trenton New Jersey.²⁷

In its war-time function as part of the Navy, the Coast Guard Air Station Brooklyn continued its patrol of waters in the New York Harbor area, but it also took on a testing, training, and delivery function similar to the rest of NAS New York. In 1944, the air station became the only helicopter base operated by the Coast Guard, which was assigned all helicopter operations by the Navy. As a helicopter base, the air station not only tested helicopters, but also trained pilots to fly them.²⁸

NAVY EXPANSION OF FLOYD BENNETT FIELD

On the eve of the commissioning ceremony for NAS New York on June 2, 1941, the *New York Times* reported on some of the changes occurring at the field as part of the transfer from municipal control:

As the United States Naval authorities went ahead last week with their plans for commissioning Floyd Bennett Field on Monday, June 2 as a full-fledged Navy [sic] Air Station, some changes in the airport's physical plant and equipment already became apparent. . . The entire acreage will be fenced in, with guards at the entrances and patrols protecting all sections. Like the [Brooklyn] Navy Yard, it will be watched twenty-four hours a day and credentials will be required of all who enter. At first it was proposed to build a brick wall along Flatbush Avenue, but now plans call for the construction of a barbed-wire fence by the WPA. . . In token of the Navy's imminent possession, Commander Smith will move into the administration building tomorrow, occupying the spacious office on the second floor formerly used by Kenneth Behr, city field manager. With its many windows, this office commands a sweeping vision of the entire flying field.²⁹

Figure 1.70: View looking south across the western half of Floyd Bennett Field just prior to the Navy's purchase, circa January 1942. This photograph illustrates a landscape little changed from its operation as a municipal airport, aside from the many military aircraft parked on the apron and former overflow parking areas. (Photograph 18996, Gateway National Recreation Area Museum Collection.)

During its seven-month lease of Floyd Bennett Field from the dedication of NAS New York on June 2, 1941 to the declaration of taking on February 9, 1942, the





Figure 1.71: View southeast from Flatbush Avenue showing the Navy's addition of temporary security fencing and a gatehouse at the head of diagonal entrance drive, probably photographed in June 1941. The gates and fence were replaced with a permanent barbed-wire cyclone fence in c.1942. (Photograph 22752, Gateway National Recreation Area Museum Collection.)

1.70). During the lease period, the Navy apparently erected a temporary mesh fence around the airport, and built temporary wood gate houses at the diagonal entrance drives to control access (fig. 1.71). The fencing did not extend across the central lawn area in front of the Administration Building.

The Navy had begun to plan for construction of NAS New York and redevelopment of Floyd Bennett Field several months before it gained ownership of the site from the city. By late 1941, plans and specifications for the work had apparently been completed. On December 17, ten days after Pearl Harbor, the Navy contracted for expansion of the airfield, new hangars, and support buildings, although most work would not begin until after federal ownership was secured on February 9, 1942. Most of the planning and design work for the expansion was undertaken in house, but the Navy also employed outside architects and engineers, such as Albert Kahn, and also made use of local public works programs. The Navy office responsible for developing plans and specifications was the Design Division within the Bureau of Yards and Docks, which was responsible for the overall management of the Navy's land facilities. The Design Division developed its own plans and specifications for new construction, and also reviewed plans and specifications prepared under outside contract.³⁰

The Navy's plans for the expansion were typical of its war-time development elsewhere across the nation that employed standardized plans that varied according to availability of resources and limitations of the local climate. The principal ground facilities of waterside naval air stations remained largely the same as they were prior to the war. These included seaplane ramps, seaplane parking areas, seaplane hangars, wharfs, landplane hangars, landplane runways, shops, schools, and personnel buildings including barracks, recreational halls, and dispensaries. The sites for naval air stations required a limited amount of landplane facilities alongside a protected body of water where seaplanes could

Navy made few improvements to the site aside from completion of the barracks at the former Naval Reserve Aviation Base at the south end of Hangar Row, and fencing of the entire site. An aerial photograph taken in or about January 1942 showed a landscape little changed in overall appearance from its operation eight months earlier as a municipal airport, although the many more military aircraft on the field was conspicuous difference, even from the air (fig.



Figure 1.72: NAS Quonset Point on Narragansett Bay, Rhode Island, the largest World War II-era naval air station on the East coast, c.1945. This photo illustrates similar features and setting to NAS New York. (National Archives, reproduced from M. L. Shettle, Jr. *United States Naval Air Stations of World War II, Volume 1: Eastern*, 1995.)

take off and land under a variety of weather conditions. Characteristic of most airfields, all major buildings and above-ground structures in naval air stations were located outside of flight-path clear zones, areas in which obstructions to flight were prohibited. One change in facilities during the war resulted from advances in aircraft, which became faster and larger. These craft required longer, more stable runways.³¹

Although naval air stations featured standardized plans and types of facilities,

no two were alike. Runway configurations varied widely, as did the arrangement of hangars, barracks, and other support facilities. NAS Quonset Point, the Navy's largest East Coast air station during World War II, was similar in land area to NAS New York and contained a similar runway pattern built on fill in Narragansett Bay (fig. 1.72). A notable difference in the two air stations was New York's origins as a municipal airport with its non-military hangars and administration building. This mixture of military and civilian infrastructure was not, however, unusual among naval air stations since many were located at former municipal airports. A total of forty-three of the eighty-six World War II-era naval air stations in the East had been former municipal or civilian airports.³²

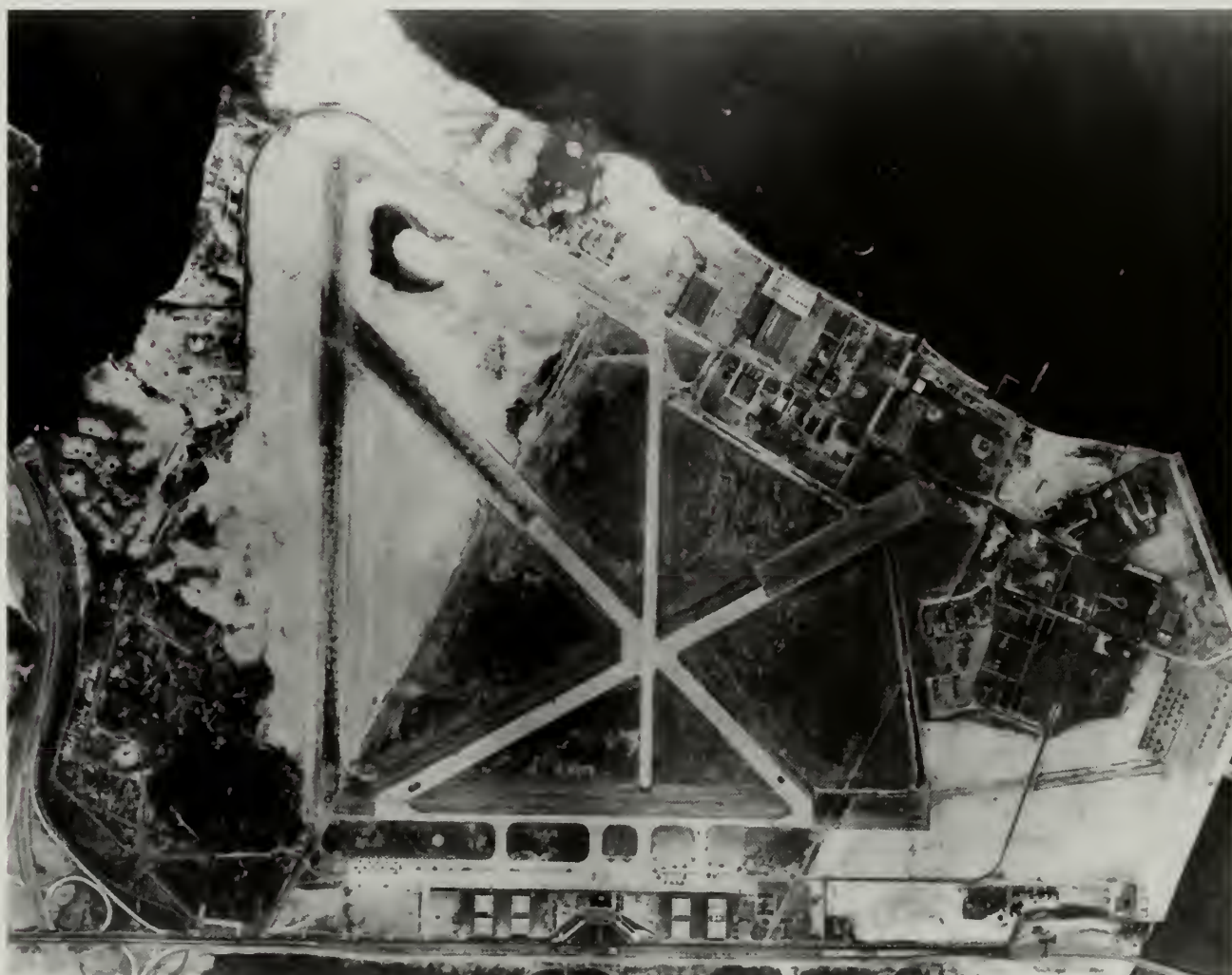
The Navy's war-time plans for buildings, structures, circulation, and landscape improvements were designed for quick and efficient construction. War-time building construction fell into two general types: permanent, intended for continued use after the war and usually employing masonry and steel; and temporary, not intended for use after the war and usually built of wood frame and modular construction.³³ Aside from facilities at the Naval Aviation Patrol Base, the permanent war-time infrastructure at NAS New York was largely built prior to the war as part of the municipal airport, while new construction was generally temporary in design. The Navy may have planned NAS New York this way because of the potential for the site to revert to the city for municipal use after the war. More important was probably the war-time shortage of labor and building materials that became acute in the spring of 1942. At this time while redevelopment of Floyd Bennett Field was just beginning, the Bureau of Yards and Docks outlined a set of rules for new construction designed to conserve resources and labor. These rules were formalized into a "Joint Directive on Wartime Construction" issued on May 20, 1941 by the War Production Board, the Secretary of War, and the Secretary of the Navy. This directive required that

buildings be no more elaborate or extensive than was absolutely essential, and that substitutes should be found for scarce materials, such as steel.³⁴

In keeping with the conservation directive and standardization, the Navy's new construction at Floyd Bennett Field was characterized overall by utilitarian design and construction without any of the architectural adornment and enduring construction that the city and Coast Guard had earlier employed. Asphalt was used instead of concrete on the runways and taxiways, and buildings were primarily frame, with clapboard or sheet-metal siding. Most non-developed areas that the Navy created from fill, such as on Barren Island and the area north of the original airport, were apparently left bare and allowed to regenerate naturally instead of being surfaced in topsoil and planted in turf. The land boundaries of the site were cordoned off by economical cyclone and barbed-wire fence.

Less than twenty-two months after the Navy's acquisition of Floyd Bennett Field, its expansion into NAS New York was largely complete, as evidenced in an aerial photograph taken on December 23, 1943 (fig. 1.73). The expansion included extensive grading and filling operations that increased the size of Floyd Bennett

Figure 1.73: Aerial view of Floyd Bennett Field showing nearly complete expansion of the municipal airport into NAS New York within two years of the Navy's acquisition of the property, photographed December 23, 1943. Hangar Row and Flatbush Avenue are at the bottom of the photograph; white areas indicate new fill while the dark turf generally indicates the limits of the original airport. (Photograph 18958, Gateway National Recreation Area Museum Collection.)



Field by nearly 872 acres; addition of runways and seaplane facilities; and the construction of approximately 100 new buildings and numerous new structures. In typical military fashion, the Navy created a site-wide numbering system for buildings and structures, ranging from Building 1 (Administration Building) to Building 128 (a salvage shed) (see Table 1.1 at the end of this chapter for complete list). With a few exceptions, those constructed prior to February 1942 were numbered 28 and below. The hangars in Hangar Row kept their municipal numbering, but the Navy also assigned them new numbers, one for each part—the main hangar, lean-to, and infill building. Barracks were also given their own numbers, 1 through 13, in addition to the site-wide numbering system.³⁵

Figure 1.74: Oblique aerial view taken in c.1944 looking south across NAS New York showing major areas of expansion and new construction in contrast with the limits of the original municipal airport (indicated by dashed line). (Photograph 18914, Gateway National Recreation Area Museum Collection, annotated by SUNY ESF.)

The Navy's development of Floyd Bennett Field was concentrated in five main areas: additions and modifications to Hangar Row including hangars and barracks; expansion of the airfield including a perimeter taxiway system and a new runway; enlargement of the Aviation Patrol Base with a second hangar and construction of an adjoining maintenance area; construction of an ammunition-communication area north of the original airport; and redevelopment of Barren Island into a main barracks area, west barracks area, seaplane base, and



marginal wharf (fig. 1.74). New buildings and other above-ground structures were developed outside of flight paths, which were defined by clear zones approximately 500 feet to either side of each runway and additional areas on the approaches.³⁶ Given its limited acreage, the Coast Guard made relatively minor additions to its air station at Floyd Bennett Field during the war.

Changes to Hangar Row

Under Navy ownership, Hangar Row remained the base of operations for the field with the commanding officers and communications center in the Administration Building and the hangars used for airplane servicing and training. However, the public face of the landscape, especially at the airport entrance off Flatbush Avenue, changed as the entire site was cordoned off with cyclone and barbed-wire fencing installed during the time between Pearl Harbor and the declaration of taking in February 1942. As a municipal airport, it was important that the entrance seem inviting and comfortable for the passengers arriving at the airport. As a military base, the Navy essentially needed to create the opposite effect. The fencing was extended across the diagonal entrance drives in place of the temporary wood guard booths and gates that had been installed when NAS New York was initially commissioned in June 1941 (fig. 1.75). Probably because the dual diagonal entrance was difficult to control and did not provide direct access to the rest of the field, the Navy built a new entrance off Flatbush Avenue south of Hangar Row, aligned with the intersection of the old Barren Island Main Street (fig. 1.76). This entrance led to a new road, later named Aviation Road, that ran south from the Hangar Row apron to access the new facilities being built on Barren Island. Around this same time, the city began to expand Flatbush Avenue into a six-lane divided highway with a planted median.³⁷ Although these improvements were probably planned by the city when it built Marine Parkway

Bridge in 1937, the work was apparently undertaken during wartime to improve vehicular access to the naval air station.

Despite the fencing and circulation changes, the Navy retained most of the airport entrance landscape, including the plantings, lawn, airport sign, and rustic light standards (see fig. 1.75).³⁸ Outside of the entrance lawn area, the Navy made a number of war-time additions and changes to the entrance area in the wave of

Figure 1.75: View of the airport entrance area looking northeast showing cyclone fence closing off entrance drives and frame addition to the Administration Building (at left), from later photograph c.1954. Also visible is the replacement control tower cab and remaining hedges and shrubs. (City of New York municipal archives, reproduced from Judith A Quinn, "Historic Structures Report, The Administration Building," 2004.)



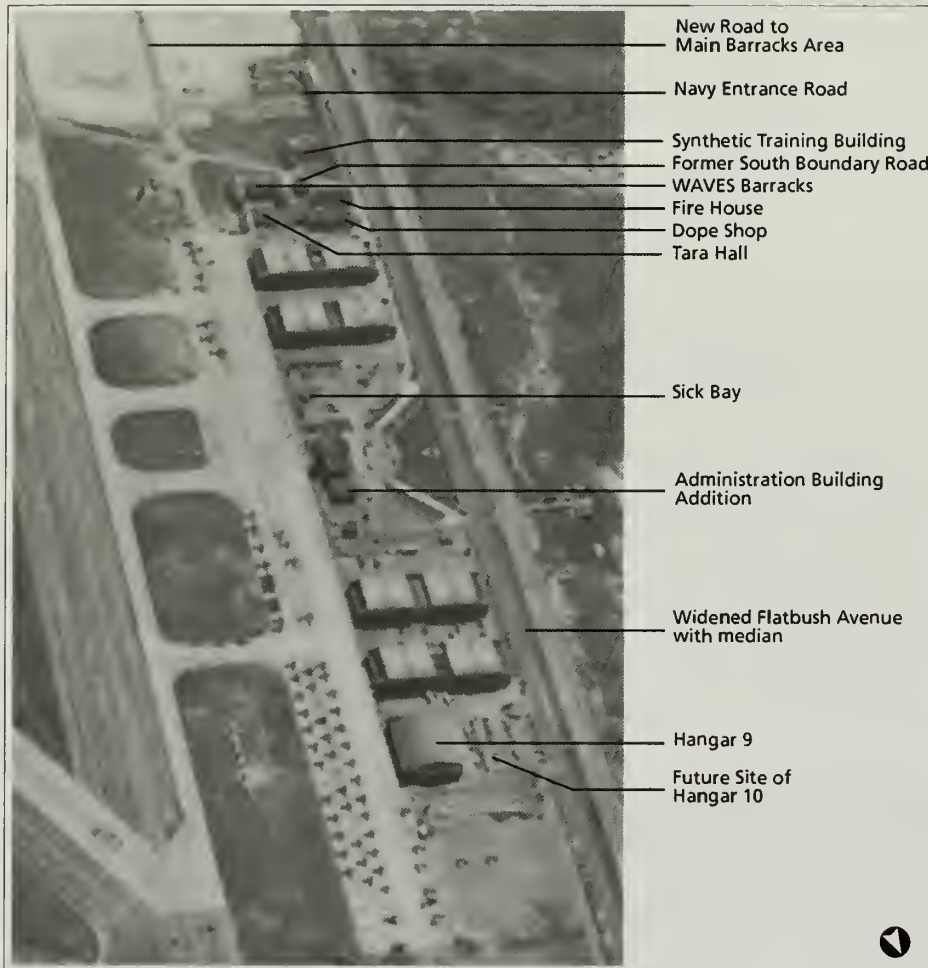


Figure 1.76: Detail of an aerial photograph taken on November 1, 1943 showing Navy additions to Hangar Row and widened Flatbush Avenue made since January 1942. Hangar 10 would be built in 1944. (Photograph 85510, Still Pictures Unit, National Archives II, annotated by SUNY ESF.)

improvements completed in 1942-43. Along the north side of the north parking lot, the airport gasoline pump house was removed and to its north, a paint storage building was constructed and a storage tank was added off the fire pump house. The WPA-built Field House was converted for use as a truck garage and office. Along the apron east of the Administration Building, the Navy removed the cyclone fence and gates that demarked the former boarding/gate area. In place of its earlier function, the Navy used this part of the apron as a parade ground where personnel marched in formal order, with officers probably reviewing from the terrace along the Administration Building (see fig. 1.68).³⁹

The most conspicuous change to the entrance area was the construction of a large, one-story addition off the north side of the Administration Building. Designed as a temporary building to house communications facilities and completed in 1943, the addition was framed in wood and was detached from the masonry main building, to which it was connected by a narrow, ten-foot corridor. With a low-pitched roof, overhanging eaves, and wood siding, the addition was a contrast to the formality of the original building (see fig. 1.75).⁴⁰ A tall communications pole and series of roof-top antennae were added at the same time. Another conspicuous change to the exterior of the Administration Building made during the war was the replacement of the neoclassical-style window enframements of the original control tower cab with a starkly modern angular glazed enclosure designed to maximize sight lines across the newly expanded airfield.⁴¹

South of the Administration Building, the Navy added a small building in the south parking area between the Administration Building and hangars 3 and 4 (see fig. 1.76). Probably built of temporary wood-frame construction in contrast to



Figure 1.77: Later view (2006) of the Navy Synthetic Training Building showing construction typical for the temporary buildings in this area south of Hangar Row as well as those at the Naval Aviation Patrol Base. (SUNY ESF)

Figure 1.78: View looking southeast at Hangar 9 and the edge of Hangar 10, which served as the base for Squadron VFR-1 of the Naval Air Ferry Command, c.1944. ("Naval Air Ferry Command" handbook, reproduce don Historic Floyd Bennett Field Taskforce, NAS New York 1941-72 webpage, <http://kerrdrill.tripod.com/id6.html>.)



the surrounding brick and steel of the earlier airport architecture, the building was used as a sick bay, the naval term for an on-shore treatment clinic.⁴² Similar temporary wood-frame buildings were built in the former Naval Reserve Aviation Base at the south end of Hangar Row, which was converted to a barracks-training area. New construction was concentrated in a triangular area due to the clear zones for runways 1-19 and 15-33. The former airport south boundary road, which ran through this area, was closed off from Flatbush Avenue and was used instead as an interior access drive (see fig. 1.75). To the south was the new

Navy entrance, which was secured by a gate house on one side and a police station on the other.

The reserve barracks completed in 1941 was retained in this area, but used instead as a barracks for WAVES (Women Accepted for Volunteer Emergency Service). The Navy added a number of similarly styled temporary buildings to this area for training and support purposes, including the Synthetic Training Building (a facility that provides models and simulations for training purposes), a Celestial Training Building, a fire house, garage, WAVES laundry building, and Tara Hall, which was a Chief Petty Officers recreation building.⁴³ Like the WAVES barracks as well as the barracks at the Aviation Patrol Base along Jamaica Bay, these buildings featured wood frame construction, gable or hipped roofs, six-over-six double-hung windows, open eaves, and white-painted clapboard siding (fig. 1.77). A number of modifications were made to adjoining maintenance buildings that lined the edge of the Hangar Row apron, including a brick addition to the transformer vault and frame shed additions to the Dope Shop and sewage pump house.

At the opposite or north end of Hangar Row, the Navy used the site of the airport's overflow parking lots for a new pair of hangars. The first hangar, designated hangar 9, was built in c.1942-43 as a base for Squadron VFR-1 of the Naval Air Ferry Command (fig. 1.78). The building, which had a distinctly different style from the airport hangars but was similar in size and plan, featured a barrel-vaulted roof with a brick two-story flat-roof lean-to on the east side. A year later, a matching connected hangar, designated hangar 10, was built on the west side of hangar 9.⁴⁴

Airfield Expansion

Despite the runway improvements undertaken through the WPA in the mid-1930s, the municipal airfield was inadequate for use by war-time military aircraft, which were larger, heavier, and far greater in number than those the Navy used in its earlier reserve center and patrol base. In March 1942, the Navy finalized plans to lengthen and widen three of the four existing runways, and to construct a new runway along the north side of the field, north of the original airfield. Filling in the expanded area north of the original field, which had continued through the 1930s, was completed and the area was graded to a level surface, except at the northeast corner of the field where a low-lying area was retained, probably for drainage purposes. The surface of the new area was not prepared with top soil and turf as was done earlier by the city, but instead left to regenerate naturally.



Figure 1.79: View looking west of a plane on a runway or taxiway showing character of the original airfield turf, c.1944. In the left distance is the Administration Building and Hangar Row. (Photograph 13419, Gateway National Recreation Area Museum Collection.)

The Navy did, however, maintain the turf field of the original airfield, although apparently not in the highly trimmed condition characteristic of the municipal airport (fig. 1.79). The northern extent of the turf remained a clear indication of the original boundary of the airport (see fig. 1.74). The Navy also made a small enlargement of the airfield at its southwest corner; an adjoining portion of the original field was removed for construction of the main barracks area.

The Navy's additions to the runway system were built mainly in asphalt rather than concrete, probably to speed construction. Improvements to existing runways included lengthening each of the diagonal runways (12-30, 1-19) to 5,000 feet and widening to 300 feet (see figs. 1.73, 1.74). Runway 15-33, the runway parallel to Hangar Row, was widened to 300 feet and lengthened to 4,500 feet. The only runway not enlarged was 6-24, the original runway that ran east from Hangar Row, due to the Aviation Patrol Base at its eastern end and Hangar Row at its western end. Because of the need to retain a runway in this cardinal direction, the Navy built a new runway 6-24 on the expanded portion of the airfield north of the original airfield, and the old runway was converted to a taxiway. The new runway, measuring 300 feet wide by 5,000 feet long to match runways 12-30 and 1-19, extended from the end of runway 15-33 and intersected the end of runway 1-19. From the ground, these changes to the airfield had little visual impact to the level, expansive character of the landscape (fig. 1.80).

Following typical designs for naval air stations, improvements to the airfield also included construction of a circumferential taxiway system that connected the ends of each runway and added a fourth taxiway to the Hangar Row apron (see fig. 1.74). The taxiways, measuring approximately 100, also provided access to



Figure 1.80: View of the airfield looking northeast from the parade grounds on the former passenger boarding-gate area (Hangar Row apron) during an unidentified ceremony, July 29, 1944. Visible in the background is one of the Sperry floodlight towers and the communications towers north of the airfield. Also note asphalt block paving dating to the municipal airport period. (Photograph 237611, RG 80, National Archives II.)

the Aviation Patrol Base and Coast Guard Air Station, which previously had no connection to the runways. One taxiway was laid out to access a new seaplane base on Barren Island south of the airfield. The taxiways were numbered 1 through 7, with taxiways 1 and 2 assigned to former runway 6-24 to either side of the intersection in the middle of the field.

In addition to the taxiways and runways, the Navy also built a number of other features in the airfield outside of the runway clear zones. These included a dirigible

landing area, officially named a “Lighter-Than-Air Facility,” in the northeast corner of the original airfield.⁴⁵ Although NAS New York did not make use of dirigibles as many naval air stations at the time did, the feature was probably considered essential should a dirigible from another station need to land at the field. Built in c.1943, the facility consisted of no above-ground structures, rather just a compacted earthen 250-foot diameter circular landing area accessed by a short taxiway. South of the landing area across taxiway 1, the Navy added a second concrete compass rose in c.1944, apparently to handle the larger and heavier military aircraft. Unlike the earlier compass rose near the Hangar Row apron, the Navy compass rose had a paved taxiway connecting it to the main taxiway. The Navy also added two training features in c.1942 within the airfield to simulate front-line conditions. One was a “rocking platform,” a structure built on the east side of the field that was used to simulate the wave action of a ship at sea. The second was a tetrahedron, a beach obstacle built within the triangular flight-path clear zone between runways 12-30, 1-19, and 6-24. Also known as a hedgehog or Element C, the tetrahedron consisted of three steel riveted rails with flattened ends to prevent sinking in the sand. Tetrahedrons were one of a number of beach obstacles that the Navy used in the Invasion of Normandy on June 6, 1944.⁴⁶

While the Navy retained much of the airfield layout, the expansion resulted in the removal and alteration of a number of features. These included the north boundary road and the adjoining fence, portions of the south boundary road and its fence, and the municipal runway lighting system and boundary lights. The Navy retained the Sperry floodlight towers as part of a new lighting system (see fig. 1.80).⁴⁷

Expansion along Jamaica Bay

During World War II, the Navy devoted a significant part of its expansion efforts at the facilities along Jamaica Bay, including additions to the Aviation Patrol Base, redevelopment of the former airport seaplane base, and construction of a maintenance area. The Coast Guard Air Station also expanded its facilities, although it remained confined to its small ten-acre parcel and was subject to war-time administration by the Navy. Together, the new facilities reinforced the cluster of development along the eastern edge of the airfield.

The Navy converted the former airport seaplane base along Jamaica Bay north of the Coast Guard air station into a recreation area and boat basin (fig. 1.81). The Navy abandoned the airport seaplane ramp, but retained the city pier and built a new pier that enclosed the boat basin. The Navy also built a number of small structures in the adjoining area above the bulkhead, including a boat house, boat repair shop, and a set of three aviation gasoline storage tanks. The recreation area, which featured two ball fields, extended in the open field between these structures and the airfield.⁴⁸ While this area was in the flight-path clear zone for runway 12-30, the buildings and structures were apparently not considered an obstacle to aircraft due to their small scale.

At the Aviation Patrol Base, the growth of the Navy's seaplane patrols during World War II made the single seaplane hangar built in 1940 inadequate for the





Figure 1.82: View of Hangar B looking northwest from the roof of Hangar A illustrating its immense clear-span and expansive concrete and asphalt apron, c.1944. (Uncatalogued photograph, RG 80, National Archives II.)

additional squadrons at Floyd Bennett Field. Plans were quickly implemented in 1942 for the second hangar as initially proposed in 1940. In preparation, the area of the base was roughly doubled through an expansion to the north (see fig. 1.81). The timber bulkheading along Jamaica Bay was extended, the area filled, and the apron surfaced in asphalt and concrete. The new hangar, designated Hangar B, was a duplicate of the earlier hangar, which was designated Hangar A (fig. 1.82). Hangar B was built

approximately 450 feet north of Hangar A and slightly to the west, probably to provide additional space on the apron, which was used as a firing area with a test backstop along its northern edge. To accommodate Hangar B, two ammunitions magazines built in c.1940 along the old northern edge of the apron were removed, but the pyrotechnic house near the bulkhead was retained as an ammunitions magazine. As part of the base enlargement, a new, larger seaplane ramp, designated seaplane ramp B, was constructed at the northern end of the apron, supplementing the smaller timber ramp across from Hangar A. The Navy also built a fenced storage yard north of the patrol base apron.⁴⁹

As work was underway on the expansion of the Aviation Patrol Base in 1942, the Navy began development of a maintenance area between the patrol base and the airfield (fig. 1.83, see also fig. 1.81). This complex of buildings, which served the entire air station, was sited outside of the adjoining flight-path clear zone for runway 12-30. It consisted of thirteen buildings by 1943 with another structure built in c.1944, and was organized in a line parallel to taxiway 5 and the road to the Aviation Patrol Base. The buildings included a fire station, two pumping stations, ammunitions storage buildings, a power plant, various storehouses, an ordinance overhaul shop, and a commissary. These were built in range of sizes and types of construction, including concrete, brick, wood, and sheet metal. The largest was the three-story concrete General Storehouse, which anchored the northern end of the complex across from Hangar A (see fig. 1.83). The Navy also added several Quonset huts, which were temporary prefabricated arched sheet-metal sheds first used by the Navy at the Quonset Point Naval Air Station in Rhode Island.

In its wartime role under Navy administration, the Coast Guard implemented only modest additions to its air station as part of its enlarged testing, training, and delivery function. The Moderne-style hangar remained the main facility, although its use changed with the introduction of helicopters in 1944 (see fig. 1.83).



Figure 1.83: Looking northwest across the Coast Guard Air Station with the maintenance area and Aviation Patrol Base barracks in the background, c.1945. The large three-story building in the background is the General Storehouse, with Hangar A to the right. Note the ornamental plantings to either side of the Coast Guard hangar dating to the building's completion in 1938. (Uncatalogued photograph, RG 80, National Archives II.)

Because of its integrated relationship with the Navy, the Coast Guard shared many facilities at the air station and therefore apparently had no need to build much additional infrastructure to satisfy its war-time functions with a few exceptions. In c.1943, the Coast Guard built its own barracks along the north side of its parcel adjoining the two Navy barracks at the Aviation Patrol Base. The new building was built to the same temporary design as the Navy barracks, using wood framing and white-painted clapboard siding. It was used in part for pilots who were trained there to fly helicopters. The Coast Guard also added a few small storage buildings near the barracks, and developed the open area west of the hangar as a ballfield.⁵⁰

Development of the Ammunitions-Communication Area

In support of its war-time patrol function, the Navy required expanded facilities to store ammunitions as well as a large open area outside of flight paths to erect radio towers to receive and send ship-to-shore communications. The Navy built these facilities in the outlying area between the new runway 6-24 and Mill Basin as part of the initial wave of development in 1942-43 (fig. 1.84). After initial site work that included completion of grading and filling that removed the last remnants of Irish Channel, the Navy began construction in 1942 on thirteen small buildings spread out along a narrow patrol road that looped around the perimeter of the airfield from the Aviation Patrol Base to Flatbush Avenue. These buildings were spread out across a long trapezoidal area defined by the clear zones for runways 1-19, 6-24, and 15-33. Extending off the patrol road were small structures for housing inert materials, pyrotechnics, fuses and detonators, high explosives, and a warhead. The high-explosive magazines were built of heavy reinforced concrete and included underground chambers. In the center of the area was the



Figure 1.84: Detail of an aerial photograph taken in August 1943 showing construction to date on the ammunitions-communication area at the north end of the naval air station. Note that buildings were restricted to areas outside of flight-path clear zones.

(Photograph 18930, Gateway National Recreation Area Museum Collection, annotated by SUNY ESF.)

radio tower complex, which consisted of a gable-roof corrugated sheet-metal transmitter building and four 150-foot tall transmitter towers that were clearly visible from Hangar Row across the open expanse of the airfield (see fig. 1.80). Off the east end of the area within the flight path of runway 1-19 was a pistol range that included a shotgun range house and a line of five small “sheet & trip” shooting houses. At the opposite west end within the clear zone for runway 12-30 was an open coal storage area and an electrical service sub-station building at the intersection of the Patrol Road and Flatbush Avenue.⁵¹

Redevelopment of Barren Island

The Navy’s plans for NAS New York identified Barren Island—the approximate 260-acre area south of the airfield that the city had planned to be part of Brooklyn Marine Park—to be completely redeveloped with two barracks areas, a marginal wharf, and a new seaplane base along Rockaway Inlet. Once the Navy secured ownership of the private property at the east end of the island in January 1942 and evicted the resident hold-outs, it began clearing and burning the remaining houses, church, piers, bulkheads, and New York Sanitary Utilization Company foundations (fig. 1.85). It soon followed with grading and filling operations that removed the dunes, trees, roads, creek, marshes, and any other trace of the old Barren Island landscape. The filling operations raised the level of the site to an approximate sixteen-foot elevation that characterized the rest of the field, extending the landmass between fifty and 400 feet into Rockaway Inlet and Jamaica Bay. The new shoreline of Barren Island was retained by sheet-pile bulkheading.⁵²



Figure 1.85: Aerial view of the east end of Barren Island showing the Navy's clearing in preparation for redevelopment, photographed January 24, 1942. The large rectangular foundations along the shore are the remains of the New York Sanitary Utilization plant. In the background is the airport seaplane pier. (Photograph 80-G-354815, RG 80, Series G, National Archives II.)

The new development on Barren Island was sited outside of the flight-path clear zones for runways 12-30, 1-19, and 15-33. These clear zones created a developable trapezoidal area on the east end of Barren Island that became the main barracks area, and a small triangular area of developable land on the west end of the island that became the west barracks area (fig. 1.86). This small area was bordered on the west by the city-owned toll booth area for the Marine Parkway Bridge. The land

within the clear zone between the two developable areas was left open, but used in part for a new seaplane base that served as the primary seaplane facility along with the Aviation Patrol Base on Jamaica Bay. Built in 1942, the Rockaway Inlet seaplane base contained no buildings, but did have a seaplane ramp in Rockaway Inlet, designated as seaplane ramp 'A,' and a large 700-foot square concrete parking apron for seaplanes. A new taxiway, designated as #7, was constructed to connect the base to the airfield at the south end of runway 15-33.⁵³

Vehicular access to the main and west barracks areas was by the new entrance that the Navy constructed off Flatbush Avenue at the south end of Hangar Row. The drive turned south to the west barracks area on what was later named Aviation Road, and branched east to the main barracks area on today's Floyd Bennett Boulevard. This road connected with the entrance road to the Aviation Patrol Base and the patrol road through the ammunitions-communication area, forming a complete perimeter loop around the naval air station (see fig. 1.86).

Most buildings in the west and main barracks areas were built according to the Navy's specifications for temporary construction, characterized by long, one- and two-story buildings with low-pitched hipped roofs, narrow clapboard siding with corner boards, boxed eaves, and two-over-two double-hung windows with horizontal muntins (fig. 1.87). Many buildings had multiple wings. These Barren Island buildings differed slightly in style from the earlier barracks and other temporary buildings at the south end of Hangar Row and in the Aviation Patrol

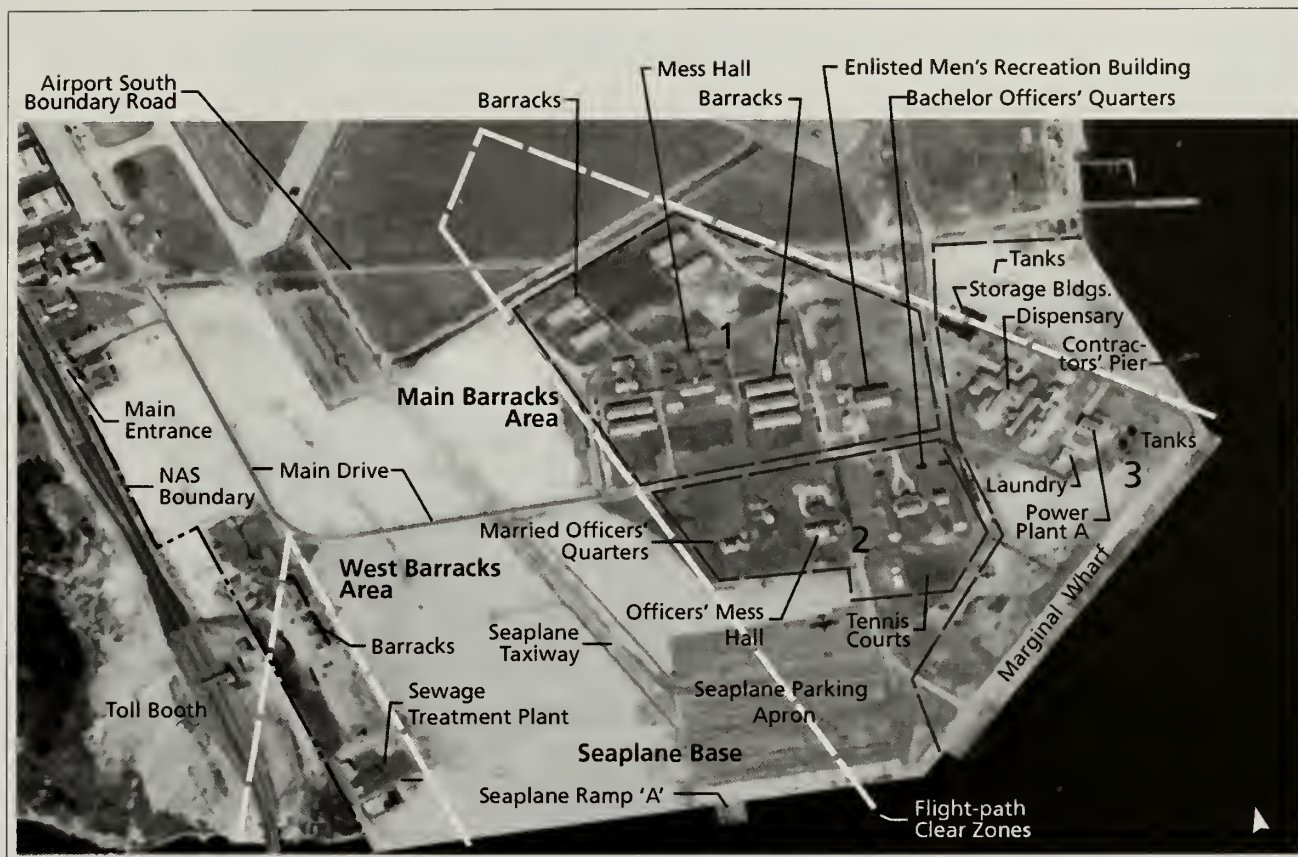


Figure 1.86: Detail of an aerial photograph taken in November 1943 showing construction to date on Barren Island within the main barracks area, seaplane base, and west barracks area. The three areas within the main barracks area were: 1. Non-officer enlisted men's area; 2. Officers' area; 3. Supply area, including the marginal wharf. (Photograph 85512, RG 80, National Archives II, annotated by SUNY ESF.)

Base, which generally had taller proportions with higher-pitched gable roofs, open eaves, and six-over-six sash windows. The buildings on Barren Island were linked by a network of concrete sidewalks that paralleled the buildings and the asphalt roads. The landscape remained open without any trees or other plantings separating it from the expanse of the airfield and the adjoining waters of Jamaica Bay and Rockaway Inlet.

The west barracks area consisted of just a pair of barracks, numbered 11 and 13, parallel to the main entrance drive with a small "heater house" between them (see fig. 1.86). At the south end of the area a short distance from the barracks was the

naval air station's incinerator and sewage treatment plant. The main barracks area was far larger and was organized into three different sections. Between the main entrance drive and the airfield was the barracks area for non-officer enlisted personnel, except for one barracks reserved for chief petty officers (fig. 1.88). This area included a central complex consisting of a central three-winged two-story



Figure 1.87: A Navy boot camp graduation showing character of one of the temporary buildings constructed in c.1942 (probably the Dispensary, 87) and open lawn in the main barracks area on Barren Island, from a later photograph, 1949. (Photograph 20302, Gateway National Recreation Area Museum Collection.)



Figure 1.88: View looking west across the main barracks area from near the marginal wharf, from a later photograph, 1953. In the right distance is the barracks area for enlisted men; the large building in the left background is the Bachelor Officers' Quarters (68). In the middle of the photograph is the laundry (85), with Power Plant B (86) to the right. The steel tanks in the foreground housed fuel (the larger one at left was added after 1945), and the concrete tanks in the background stored water. (Photograph 19494, Gateway National Recreation Area Museum Collection.)

officers oriented along a 'U'-shaped drive aligned with the lawn of the central barracks complex to the north. East of these houses was the officers' mess hall, also known as the officers' club. Although of temporary frame construction, this building featured an elaborate interior decorated by famed interior designer Dorothy Draper, with art deco elements recovered from the ocean liner, the S.S. Normandie that had just sunk in 1941.⁵⁴ East of the officers' club was the biggest building in the main barracks area—an eight-winged two-story barracks that served as bachelor officers' quarters. South of these barracks was a recreational area that included tennis courts.

Although most buildings in the main barracks area were used for housing and personnel-related services, the east side was the site of facilities used for supply and service purposes (see fig. 1.86). These facilities were located here because of the adjoining deep waters of the Rockaway Inlet, along which the Navy built a 1,700-foot long marginal wharf (a wharf that ran parallel rather than perpendicular to the shoreline). From this wharf ships received and unloaded supplies, a use not unlike that which had been going on at this location since the

mid-nineteenth century. The wharf featured a sheet-pile bulkhead with a concrete curb, iron bollards and cleats, and a paved apron (fig. 1.89). This apron was connected to a road that led to nearby supply and storage buildings, including a multi-winged dispensary,



Figure 1.89: The marginal wharf with its concrete bulkhead and iron cleats, view looking east with Rockaway Inlet to the right, from a later photograph, c. 1950. The identity of the sailor is not known. (Uncatalogued maintenance file photograph, Floyd Bennett Field, Gateway National Recreation Area.)



Figure 1.90: View looking northwest toward the airfield over the multi-winged dispensary (87) and adjoining storage buildings (122, 123, 124) in the main barracks area, with the maintenance-area visible in the right background, c.1944. Note the very barren character of the landscape. (Uncatalogued maintenance file photograph, Floyd Bennett Field, Gateway National Recreation Area.)

where supplies were received and dispensed for use within the naval air station (fig. 1.90, see also fig. 1.88). Nearby were several smaller storage buildings, as well as fuel oil and water storage tanks, a laundry, and a large brick powerhouse designated Power Plant A that was the same design as Power Plant B in the maintenance area along Jamaica Bay.

LANDSCAPE CHARACTERISTICS, 1945 (DRAWING 1.3)

In 1945 at the end of World War II, the landscape of NAS New York reflected massive war-time development that had greatly expanded the former municipal airport, completed in large part within two years of the Navy's acquisition of the property in February 1942 (fig. 1.91). The development was characteristic of naval air stations of the period that included standardized design and a mix of temporary and permanent war-time construction. Despite the new development, the landscape retained the overall open, expansive feeling that had characterized the municipal airport, as well as its key buildings and organizational elements including Hangar Row, runways, and the Jamaica Bay facilities. The most significant change came to the Barren Island community, whose narrow streets, small houses, groves of trees, dunes, beaches, and factory remnants were replaced by a level, treeless expanse with numerous large buildings.

Natural Systems and Features

By 1945, Floyd Bennett Field had been nearly completely transformed into an artificial, engineered landscape with the Navy's redevelopment of the areas north and south of the municipal airport. The last remnants of the tidal estuary



Figure 1.91: Aerial view of Floyd Bennett Field (NAS New York) looking northeast showing general character of the landscape shortly after the end of the war, photographed March 12, 1947. The Navy made few changes in the immediate post-war years. (Photograph 16176, Gateway National Recreation Area Museum Collection.)

on Barren Island and north of the airport had been removed through the Navy's filling and grading operations (see fig. 1.74). The entire shoreline of Rockaway Inlet was extended out and artificially contained by steel bulkheading. Despite the engineering, natural systems quickly became reestablished in the landscape. Along the shorelines without bulkheading along Mill Basin and Jamaica Bay, natural beach had begun to reemerge as well as the natural forces of the tidal estuary. Natural flora, including grasses and possibly low woody plants, was also taking hold by 1945 in undeveloped areas that were not actively managed, such as large parts of the ammunitions-communication area and the expanded portion of the airfield not maintained as turf.

Spatial Organization

The overall spatial organization of the Floyd Bennett Field landscape in 1945 remained expansive with minimal enclosure. This expansive quality was due not only to the level topography, surrounding large bodies of water, and widely scattered clusters of buildings, but also to the complete lack of trees on the site, except for some young sycamores along Flatbush Avenue and in the airport entrance area. The long, flat runways further emphasized the open character of the landscape. The southern side of the airfield prior to 1941 had been partially enclosed by the trees on Barren Island, but these were removed as part of the Navy's war-time redevelopment. The only defined spaces were found within the developed areas of Hangar Row, the main and west barracks areas, and the

areas along Jamaica Bay where there were many small interstitial spaces created by buildings and structures (see figs. 1.83, 1.87). The two enlisted men's barracks complexes within the main barracks area featured central lawns or courtyards defined by a central main building flanked by barracks (see fig. 1.86). The large multi-winged Bachelor Officers' Quarters featured a shallow entrance court accessed by a circular drive. The Married Officer Quarters were single-family houses organized around a central lawn defined by a 'U'-shaped drive. Other small spaces were created by structures and small-scale features related to a particular use, such as a pistol range in the ammunitions-communication area, a fenced storage area north of the Aviation Patrol Base; a boat basin defined by piers at the former airport seaplane base; and recreational areas with ballfields at the Coast Guard air station and former airport seaplane base.

Land Use

In 1945, Floyd Bennett Field was used strictly for military purposes in its role as NAS New York, expanding greatly on the military uses that were present on the site prior to 1941. With eleven stationed units and upwards of 4,700 officers, enlisted men, and civilians, Floyd Bennett Field was one of the nation's busiest naval air stations. It was the headquarters for the Naval Ferry Command, center for testing and delivery of aircraft, base for numerous seaplane patrol squadrons, site of pioneering helicopter testing, center for pilot training, and a supply depot. Earlier commercial aviation and aviation-related retail services disappeared from the site upon transfer to the Navy in 1941, and the last remaining private residential uses ceased upon the Navy's acquisition of Barren Island in 1942. Aside from the Navy, the only other user of Floyd Bennett Field in 1945 was the Coast Guard, although it was under the jurisdiction of the Navy throughout the war. Aside from the massive new development on the site, the most conspicuous result of the change to war-time military use was the prohibition of public access and the addition of perimeter barbed wire and chain-link fencing. The city's plans for public recreational use of the southern part of the site on Barren Island were lost with Navy takeover and redevelopment during the war.

Cluster Arrangement

In 1945, the Floyd Bennett Field landscape remained largely open and expansive with development restricted to limited areas defined largely by flight-path clear zones that extended approximately 650 feet to either side of the center line of the runways, as well as for considerable distances at the approaches (see fig. 1.91). While roads, parking aprons, and small buildings were constructed within the clear zones, most buildings were excluded from these areas to avoid obstructions to flight. Three main clusters ringed the perimeter of the airfield. Along the west side bordering Flatbush Avenue was Hangar Row, which the Navy expanded with

additional buildings at its north and south ends; to the south within a trapezoidal area between the flight paths of runways 12-30, 1-19, and 15-33 was the main barracks area that was built by the Navy in 1942-43; and to the east along Jamaica Bay north of the flight path of runway 12-30 was the Aviation Patrol Base and Coast Guard Air Station that were expanded in 1942-43, and the maintenance area that was built in 1942-43 with a mix of frame, brick and metal buildings of various sizes. The west barracks, located at the southwest corner of the field along the runway 15-33 flight path, formed a small cluster in the landscape, consisting of two temporary barracks and the station's sewage and garbage incinerator built in 1942-43. Due to the widely scattered location and small scale of its buildings, the ammunitions-communication area north of the runway 6-24 flight-path did not form a discernable cluster in the landscape, although the group of four 150-foot tall radio towers were a conspicuous part of the landscape.

Topography

The topography of the Floyd Bennett Field landscape in 1945 consisted of a largely uniform engineered terrace approximately sixteen feet above mean low tide (see fig. 1.91). This terrace replaced the dunes and marshes of Barren Island that were removed through filling and grading operations in 1942. While the Navy also filled and graded most of the topography north of the original airport, it left a low-lying area at the northeast corner of the airfield, probably for drainage purposes. This area north of the original airport was apparently not graded to the uniform level surface as was Barren Island. The shoreline along Mill Basin and the northern part of the Jamaica Bay frontage was built without a bulkhead, which allowed a natural sand beach to form.

Vegetation

Vegetation (managed plant materials) in the Floyd Bennett Field landscape in 1945 was limited primarily to the turf, trees, and shrubs planted prior to 1941 by the city and Coast Guard. Despite closing of the original airport entrance, the Navy maintained the vegetation there. It also maintained the airfield turf, although probably not to the same exacting level as the city had since the turf was no longer needed as an emergency landing area. The Navy did not establish turf in the expanded areas of the airfield to the north, instead leaving the ground to natural succession which by 1945 only included grasses and possibly low-lying woody plants (see fig. 1.74). In the barracks areas on Barren Island and other developed areas such as the maintenance area, the Navy established turf to stabilize the sandy soils. Aside from the trees in the original airport entrance, along Flatbush Avenue, and by the Coast Guard hangar, the entire landscape was devoid of trees, woods, or groves of any kind in 1945 (see fig. 1.91).

Circulation

In 1945, circulation within the Floyd Bennett Field landscape was dominated by an enlarged system of runways, taxiways, and aprons (see fig. 1.74). The Navy widened and lengthened three of the four preexisting runways and constructed a new runway north of the original airport that replaced one of the two original runways. While the municipal runways and aprons were concrete, the Navy extensions were built primarily in asphalt. The Navy also constructed a perimeter taxiway system, numbered 1 through 7, that connected the ends of each runway and provided direct access from the Jamaica Bay facilities to the runways. Taxiway 7 connected to a new seaplane parking apron built along the Rockaway Inlet on Barren Island. The Navy also added a second compass rose, a dirigible landing area, and numerous asphalt roads throughout the site, many of which were lined by sidewalks within the developed areas. Although initially the Navy kept the diagonal airport entrance drives open with patrolled gates, at the start of the war this entrance was closed off by cyclone fencing and replaced with a new gated entrance off Flatbush Avenue to the south. This new entrance led to a main drive that extended north to Hangar Row, south to the west barracks area (Aviation Road), east through the main barracks area (Floyd Bennett Boulevard), north through the facilities along Jamaica Bay, and then connected to a patrol road that ran around the northern perimeter in the ammunitions-communication area to Flatbush Avenue. The entire airport north boundary road and parts of south boundary road were removed, although the asphalt surface of the south boundary road remained outside of the new taxiways and developed areas. No trace remained of the roads on Barren Island, although the new entrance was located at the approximate site of the former intersection of Main Street and Flatbush Avenue.

Buildings and Structures

In 1945, Floyd Bennett Field contained approximately 100 new buildings constructed during the Navy's massive war-time expansion, dating primarily to 1942-43. The Navy created a numbering system for buildings, beginning with #1 (Administration Building) and ending with #128, a salvage shed probably built near the end of the war (see Table 1.1 at the end of this section for a list of buildings and structures). The landscape lost a number of buildings during this period, primarily the remaining twenty-three houses and church that remained at the east end of Barren Island in 1941. The Navy retained all of the municipal airport buildings except for a few ancillary structures in the maintenance area south of Hangar Row.

All new construction departed from the standard Art Deco and neoclassical airport styles found at Hangar Row, and the Moderne style used by the Coast

Guard. Instead, the Navy employed a utilitarian style that reflected war-time restraints as well as typical naval architecture found in the earlier Naval Aviation Patrol Base buildings. The Navy's new building program consisted of two types of construction: temporary and permanent. The temporary buildings at Floyd Bennett Field were wood frame with clapboard or sheet-metal siding. The wood-frame barracks south of Hangar Row and in the Aviation Patrol Base featured high-pitched gable roofs, wide clapboard siding, open eaves, and six-over-six double-hung sash windows (see figs. 1.77, 1.83). This style dated to an initial phase of temporary construction that began during the national emergency prior to the war and was also used for the two barracks at the Aviation Patrol Base built in 1940. Most of the temporary buildings constructed on Barren Island in 1942-43, primarily barracks, mess halls, and recreation buildings, used a more horizontal style characterized by low-pitched gable roofs, narrow clapboard siding, boxed eaves, and two-over-two double-hung windows with horizontal muntins (see fig. 1.87, 1.88). Many of the large barracks and other support buildings featured multiple stories and wings. Other temporary buildings included an addition on the north side of the Administration Building used to house communications operations; the two wood-truss hangars 9 and 10 (46, 51) at the north end of Hangar Row; several frame sheet-metal sheathed buildings within the maintenance-storage area (28, 56, 52, 55); and the sheet-metal sheathed transmitter building (118) within the ammunitions-communication area, among many others.

Permanent construction added by the Navy during this period included steel-frame Hangar B (100) in the Aviation Patrol Base, a duplicate of Hangar A (23) built in 1940; brick Power Plant A (86) and a brick laundry (85) in the main barracks area; brick Power Plant B (96) and the concrete General Storehouse (98) in the maintenance area (see fig. 1.83); and concrete high-explosive ammunition magazines (110-115) north of the airfield.

In addition to buildings, the Floyd Bennett Field landscape in 1945 contained numerous structures added by the Navy over the previous four years for military and support functions. A smaller communications tower was located next to the frame wing on the Administration Building, and along the northern horizon of the airfield was a cluster of four, 150-foot tall steel radio towers added for ship-to-shore communication (see fig. 1.80). To the east of the towers were a number of small structures including a backstop and shooting houses that were part of a pistol range. Along Rockaway Inlet were seaplane ramp 'A' associated with the adjoining seaplane parking area, and a 1,700-foot long concrete marginal wharf, plus sheet-metal bulkheads (see fig. 1.89). Along the Jamaica Bay shoreline were timber and sheet-metal bulkheads, and numerous piers and seaplane ramps. These included seaplane ramp 'B' in the Aviation Patrol Base, the timber seaplane

ramp built with Hangar A, the timber Coast Guard seaplane ramp, and the timber city seaplane ramp, which was probably not used by the Navy. Wood piers were located at the Aviation Patrol Base, Coast Guard Air Station, and at the Navy boat basin in the former airport seaplane base, where the earlier city seaplane pier also remained. Lastly, the Navy added AVGAS (aviation gas) storage tanks south of the Coast Guard Air Station and along the marginal wharf (see fig. 1.88); and an incinerator and sewage treatment plant (58, 59, 60) at the south end of the west barracks area.

Views and Vistas

Because of the necessity for continued aviation use, expansive, panoramic views remained a key characteristic of the Floyd Bennett Field landscape in 1945 (see figs. 1.79, 1.80). Views included sight lines along the runways and panoramic views across the airfield that allowed planes on taxiways and runways to see each other, and also permitted personnel in the control tower of the Administration Building to see the entire airfield. Removal of trees on Barren Island opened up ground-level views to the south, except where limited by buildings in the main barracks area. New construction along Jamaica Bay, notably Hangar B and the multiple buildings in the maintenance area, formed the horizon for views looking east across the airfield, as Hangar Row did for views looking west.

Small-Scale Features

In 1945, the Floyd Bennett Field landscape contained a variety of small-scale features most of which were probably added by the Navy as part of the massive war-time expansion. These probably included numerous signs, fences, and light standards, as well as landing lights along the runway that replaced the earlier airport system.⁵⁵ The Navy fenced the Flatbush Avenue and Shore Parkway boundary with an approximate six-foot high chain-link fence topped by barbed wire (see fig. 1.75). There were other fences within the site, such as one around the storage yard north of the Aviation Patrol Base. Aside from the city's runway light system that had to be removed due to the expansion of the runways, the Navy maintained many of the preexisting small-scale features, including the flagpole and rustic and cast-iron light standards at the airport entrance. The Navy kept the airport sign, with its signboard that read "Floyd Bennett Airport," throughout the war years.⁵⁶ The most numerous small-scale features (although not so very small) were the hundreds of planes and vehicles stationed at the naval air station, which were a conspicuous part of the war-time landscape.

TABLE 1.1

FLOYD BENNETT FIELD WORLD WAR II-PERIOD BUILDING/STRUCTURE KEY (1945)

Source: "Map of U.S. Naval Air Station New York, N.Y. Showing Conditions on June 30, 1947." Italics indicate pre-1942 buildings/structures; all others built 1942-1945. Table assumes buildings existing in 1947 were built 1941-45.

NAS NEW YORK

1	<i>Administration Building</i>	58	Transformer Vault
2	<i>Crash Truck Garage/Office (former Field House)</i>	58	Garage—Aviation Free Gunnery
3-22	<i>Hangar Row Hangars 1-8 (with lean-to, infill bldgs.)</i>	58	Incinerator
23	<i>Seaplane Hangar A (Aviation Patrol Base)</i>	60	Sewage Treatment Plant
24	<i>Squadron Barracks No. 14</i>	61-64	Barracks Nos. 1 to 4
25	<i>Coast Guard Hangar</i>	65	Barracks No. 6
26	<i>Dope Shop & Sheet Metal Shop</i>	66	Unknown
27	WAVES, Barracks No. 12	67	Mess Hall
28	TARA Hall – CPO Recreation Building	68	Bachelor Officers' Quarters
29	<i>Fire Pump House & Water Tank</i>	69	CPO Barracks No. 5
30	<i>Sewage Ejector Pump House</i>	70	West Recreation Building
31	Demolished pre-1941	71	Marines' Garage
32, 33	Gasoline Pump Houses (location of 32 unknown)	72	Marines Barracks No. 15
34	Storage Building	73	Officers' Mess Building
35	Boat House	74	Enlisted Mens' Recreation Building
36	Salvage Building	75	Sewage Pumping Station 'A'
37	Equipment Shed	76	Barracks No. 10
38	<i>Squadron Bachelor Officers' Quarters</i>	77	Barracks No. 8
39, 40	<i>Sperry floodlight towers (?)</i>	78	Barracks No. 9
41	Ammunitions Storage	79	Barracks No. 7
42-45	Ammunitions Lockers	80	Barracks No. 13
46	Hangar 9 (Naval Air Ferry Command)	81	Barracks No. 11
47	Paint Store House	82	Heater House
48	Sick Bay	83-84	Gasoline Storage Tanks Pump Stations
49	Boat Repair Shop	85	Laundry
50	Fire House	86	Power Plant 'A'
51	Hangar 10	87	Dispensary
52	WAVES Laundry	88	South Service Sub Station
53	Celestial Navigation Training Building	89	Sewage Pumping Station 'B'
54	Synthetic Training Building	90	Fire Station & Garage
55	Gate House (New Navy entrance)	91	Station Maintenance
56	Public Works Office & Police Station	92	Paint & Oil Storehouse

93	Bombsight Storage	A	Married Officer Quarters
94	Torpedo Storage	B	Married Officer Quarters
95	Ordinance Overhaul Shop		
96	Power Plant 'B'	Structures Below Not Numbered	
97	Cold Storage & Commissary		<i>Municipal Seaplane Pier</i>
98	General Storehouse		<i>Municipal Seaplane Ramp</i>
99	Pumping Station—Fire Protection		Seaplane Ramp A
100	Seaplane Hangar 'B'		Seaplane Ramp B
101	Fuel Oil Storage Substation No. 2		Contractors' Pier
102	Water Storage Pump House		Boat Basin Pier
103	Lighter-Than-Air Facilities		Marginal Wharf
104	Storage Building (Misc.)		Water Storage Tanks (2)
105	Shotgun Range House		Fuel Oil Storage Tanks (2)
106	Inert Storage		AVGAS Storage Tanks (7)
107	Smoke Drum Storage		Motor Gas Storage Tank
108	S. A. Pyrotechnics		Pumping Station Water Tank
109	Practice Bomb Storage		Transformer Vault
110, 111	Fuse & Detonator Magazines		High Frequency Radio Antennae (4)
112-115	High Explosive Magazines (4)		Tetrahedron
116	Warhead		Rocking Platform
117	North Service Sub-Station		Airport Entrance Bus Shelter
118	Radio Transmitter Building		BOQ Tennis Courts
119	Direction Finder Station		<i>Coast Guard Hangar</i>
120	Transformer Vault		<i>Coast Guard Garage</i>
121	Demolished (unknown, pre-1947)		<i>Coast Guard Radio Towers (3)</i>
122	P. W. Storehouse 'A' & Hospital Corpsmen Barracks		<i>Coast Guard Seaplane Ramp</i>
123	P. W. Storehouse 'B'		Coast Guard Barracks
124	Gasoline Distribution & Operation Office		Coast Guard Transformer Vault
125	Furniture Maintenance Building		
126	Paint Storage Building		
127	Electrical Gear Shed		
128	Salvage Shed		
Q1-Q5	Quonset Huts		
<u>Acronyms</u> CPO = Chief Petty Officer P.W. = Public Works S.A. = (?) BOQ = Bachelor Officers' Quarters WAVES = Women Accepted for Volunteer Emergency Service			

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- 16 Letter, Judge Advocate General of the Navy W.B. Woodson to Mayor Fiorello H. LaGuardia, 29 January 1942, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 824, NARA II.
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Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

World War II Period 1941-1945



National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

1. Aerial photograph, 1935
2. U.S.G.S., Coney Island quadrangle, 1939
3. U.S. Navy, map of Floyd Bennett Field, June 30, 1940
4. Map of NAS New York, June 30, 1947

DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

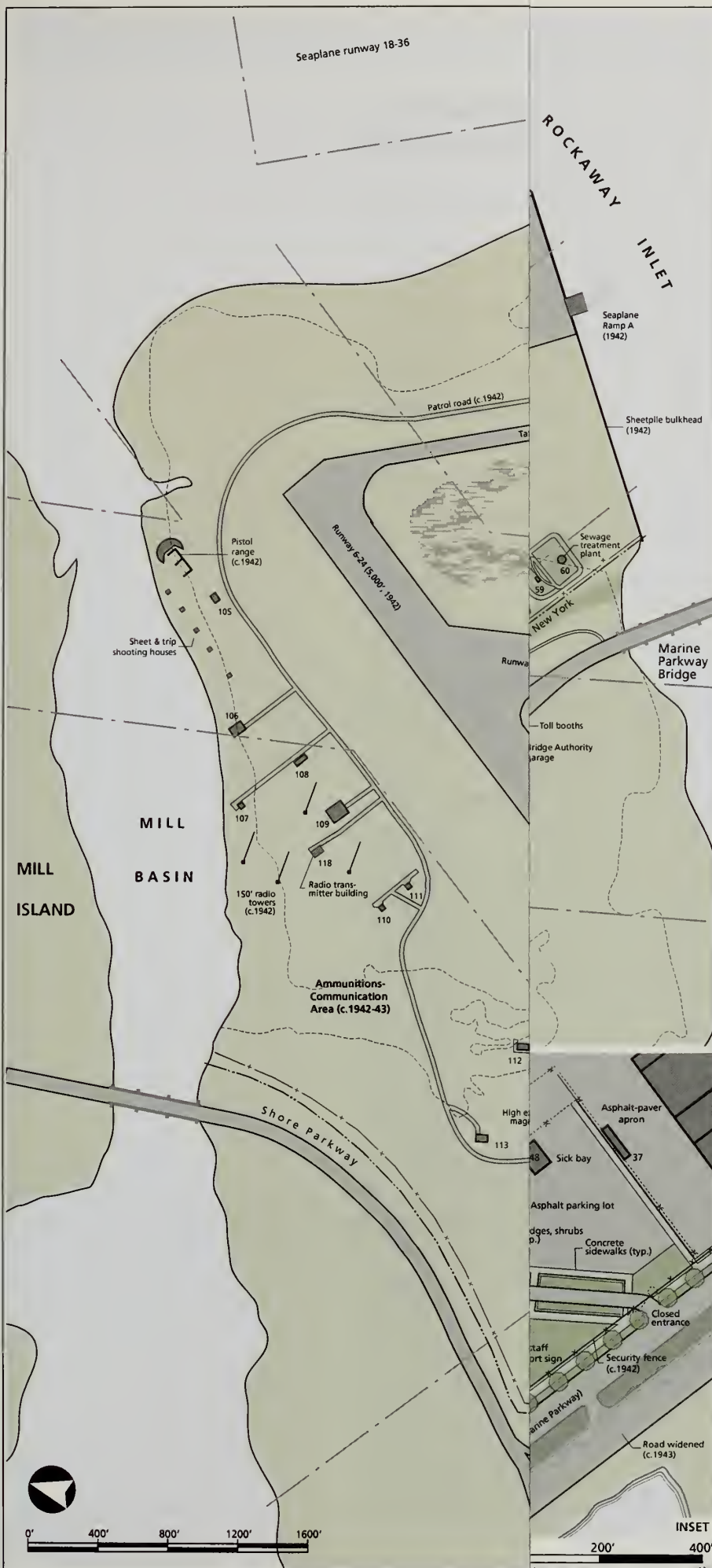
LEGEND

	Property, jurisdictional boundary
	Flight-path clearance line
	Building/structure, inventory number
	Paved, unpaved vehicular circulation
	Sidewalk
	Fence, light
	Woods, specimen tree
	Managed turf/lawn
	Upland/fill, low scrub
	Marsh
	Open water
	Site of feature removed since 1941
	Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1941 not dated.
3. Vegetation unknown except where indicated.
4. Plan shows conditions at end of period in 1945.
5. All buildings above 26 built in 1942-43 except where noted. See Table 1 for building key.

Drawing 1.3



Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
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1941-1945



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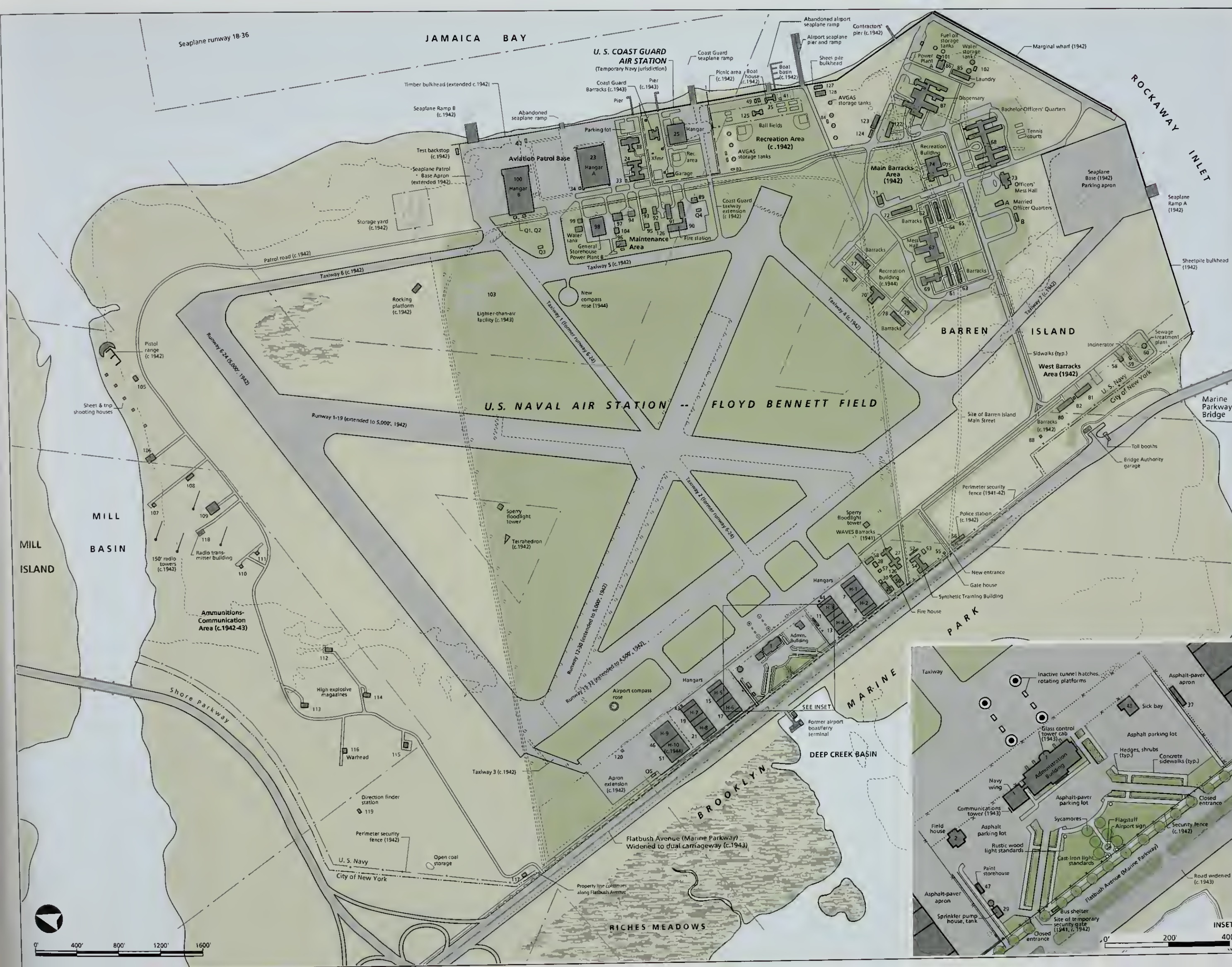
LEGEND

- Property, jurisdictional boundary
- Flight-path clearance line
- Building/structure, inventory number
- Paved, unpaved vehicular circulation
- Sidewalk
- Fence, light
- Woods, specimen tree
- Managed turf/lawn
- Upland/fill, low scrub
- Marsh
- Open water
- Site of feature removed since 1941
- (1942) Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1941 not dated.
3. Vegetation unknown except where indicated.
4. Plan shows conditions at end of period in 1945.
5. All buildings above 26 built in 1942-43 except where noted. See Table 1 for building key.

Drawing 1.3



FLOYD BENNETT FIELD IN THE COLD WAR: NAS NEW YORK, 1945-1972

While Floyd Bennett Field played a vital function in the World War II home front, its military role in the decades that followed declined overall with a few exceptions. In the immediate post-war years, military activity at NAS New York dropped significantly as the Navy reduced its war-time arsenal at bases across the country. The Navy was faced with much more infrastructure than it needed, and so began to remove some of the temporary buildings and to lease out portions of the field to other public agencies as the city had done prior to the war. Beginning in 1950 with the Korean War, the Navy invested in a program of improvements that resulted in some changes to the landscape. Change continued through the 1960s with additional demolitions and some new construction, but the overall character of the landscape as developed through World War II remained largely changed. By the closing years of the Vietnam War in the early 1970s, the Navy had little use for NAS New York and in 1971 it was decommissioned as part of a plan for its transformation into a public recreation area. The Navy retained ownership of Floyd Bennett Field until late 1972 while plans were finalized for its post-military future.

FLOYD BENNETT FIELD IN THE POST-WAR YEARS, 1945-1950

From the start of the Cold War that began soon after the surrender of Nazi Germany in May 1945, the Navy played a key role in the U.S. military operations against Soviet advances beginning with President Harry Truman's dispatch of the battleship *Missouri* to the eastern Mediterranean in 1946. Despite the looming threat overseas, the Navy began the enormous task of demobilizing its World War II home front operations. Many naval aviation installations across the country were decommissioned, while others were retained but downsized.¹

The Navy retained NAS New York as a commissioned base, but ceased many of its war-time operations there, leading to significant reduction in both military and civilian staff at the field. Most of these reductions were tied to greatly decreased aircraft production that led to transfer of the ferry-delivery command in 1946 to NAS Norfolk, Virginia, and the subsequent termination of the aircraft commissioning unit.² The war-time seaplane patrol functions, housed at the Aviation Patrol Base on Jamaica Bay, were also greatly curtailed. Although the field lost its key war-time operations, the Navy retained and expanded its function as a training facility. In July 1946, the Navy redesignated NAS New York as a Naval Air Reserve Training Station, although it still was often referred to by its previous designation. Floyd Bennett Field would serve as one of the Navy's important training facilities for both the Navy and Marine Reserves over the course of

the next twenty-six years, although it would officially retain its designation as a training station only until 1950.³

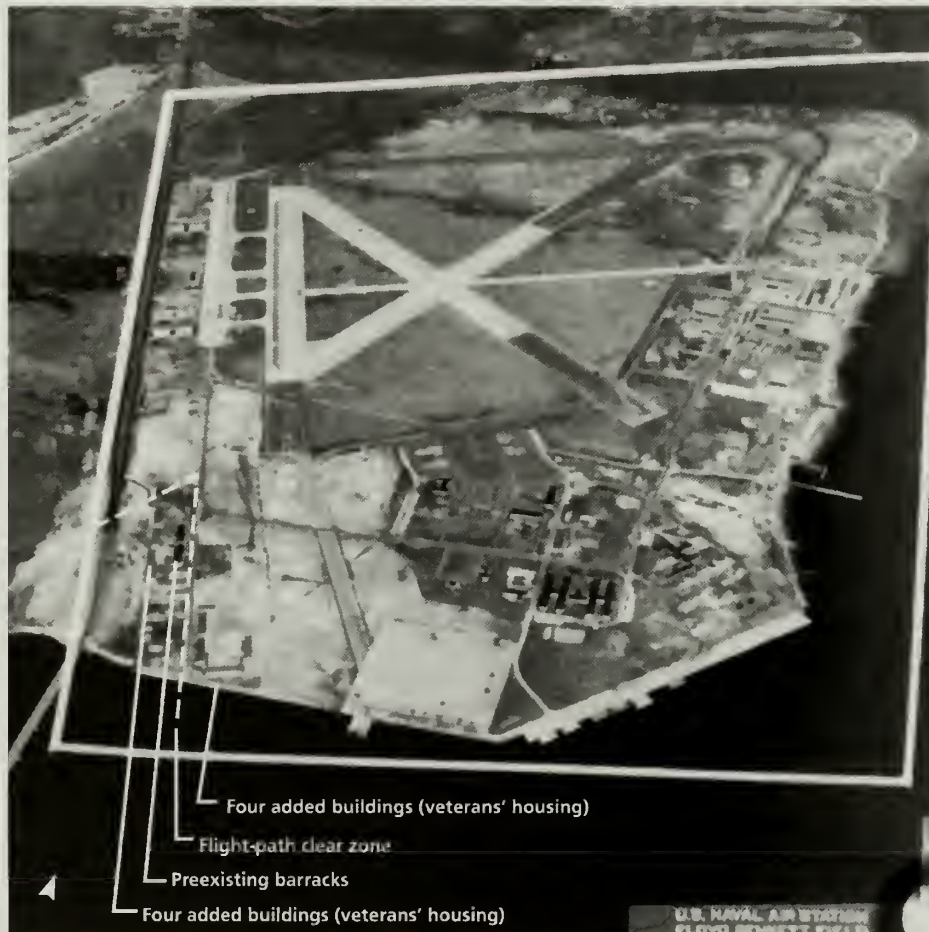
The Navy made few changes to Floyd Bennett Field in the first two years following the war. An aerial photograph taken in March 1947 showed a landscape little changed since the end of the war almost two years earlier (see fig. 1.91). By the summer of 1948, however, the Navy had removed eight of the temporary frame buildings in the west barracks area probably due to the substantially reduced personnel stationed there, leaving the concrete foundation pads. These included the four barracks (76-79) that flanked the west recreation building (70), and four of the five barracks (61-65) flanking the main mess hall (67).⁴ (fig. 1.92)

Figure 1.92: Aerial photograph of Floyd Bennett Field taken on August 16, 1948 illustrating addition of state veterans' housing in the west barracks area. The new veterans' housing may have been barracks relocated from the main barracks area. (Photograph 80-G-396160, Still Pictures Division, National Archives II, annotated by SUNY ESF. The white frame is part of the original photograph.)

Aside from removal of the barracks, the Navy made a number of improvements to the navigational infrastructure of the field during the post-war years, probably to improve the site's use as a training facility. In 1946, the Navy spent approximately \$200,000 on the installation of a new instrument approach system, a new radio compass location station, and new ground control approach equipment. These new systems apparently made the original Sperry floodlight system obsolete, and the Navy demolished the two brick towers located within the airfield by March 1947.⁵ The Navy also redeveloped the recreation area within the former airport

seaplane base along Jamaica Bay, replacing two ballfields constructed during the war with a running track in c.1947.⁶

With the war-time demobilization, the Navy recognized that it had far more infrastructure than it needed at Floyd Bennett Field. At the same time, many other public agencies were searching for adequate facilities. Soon after the war, the Navy entered into an agreement with the State of New York Housing Authority to provide housing at Floyd Bennett Field for returning veterans. The Navy identified the west barracks area at the



southwest corner of the field as the site for this new housing, probably due to its isolated location apart from the main areas of the field, and lack of preexisting facilities except for the sewage treatment plant and two barracks. In early 1947, the Navy agreed to allow the state to relocate eight buildings to the west barracks area.⁷ By August 1948, the eight buildings were in place, including four surrounding the two preexisting barracks and four clustered at the south end of the area along Rockaway Inlet, southeast of the sewage treatment plant (see fig. 1.92) These eight long, gabled rectangular buildings were similar in size and style to the preexisting barracks, and may in fact have been the eight barracks that the Navy removed from the main barracks area around the same time. The south group of buildings extended well into the flight-path clear zone for runway 15-33, which ran parallel to Hangar Row, probably because that runway was not actively used for takeoffs and landings.

From early on following World War II, the Navy began to vacate most of the facilities in Hangar Row, concentrating its activities in the main barracks area and the Aviation Patrol Base along Jamaica Bay. The Navy relocated its headquarters the Chief Petty Officers' barracks (69) within the main barracks area, and added a flagstaff to mark the entrance. The Navy began to lease out Hangar Row in September 1946, when it issued a lease to the New York City Police Aviation Bureau, which had vacated Floyd Bennett Field with the takeover by the Navy in June 1941. The lease was for the use of hangar 3, located south of the Administration Building. At the same time, the Navy entered into discussions with the Port Authority of New York, which sought commercial use of Hangar Row and the airfield to relieve congestion at the city's two municipal airports, North Beach (LaGuardia) and Idlewild (JFK), the latter recently built on the east side of Jamaica Bay but not quite finished.⁸ Although the Navy was interested in making use of the mostly empty Hangar Row facilities, it reached an impasse with the city over the costs for relocating Navy operations that would be impacted by the reintroduction of commercial aviation.⁹

The talks between the Navy and the Port Authority came to an end when, in September 1947, the Navy issued an order giving use of Hangar Row to the New York Air National Guard and Army Air Reserve.¹⁰ These two aviation groups soon began operation at the field, and by May 1949, the Navy had agreed to a formal outgrant to New York Air National Guard, which had been reorganized as a department of the newly established U.S. Air Force. The outgrant allowed the Air Force use of all facilities in Hangar Row with the exception of six buildings: the Dope Shop, the Celestial Navigation Building, the entrance gate house/sentry booth, and a storage structure all located at the south end of Hangar Row; hangar 3, still under lease to the city police; and the Administration Building, where the Navy probably maintained some offices and use of the control tower. The permit

Figure 1.93: View looking south from the Coast Guard hangar showing expanded apron and taxiway, photographed c.1955. In the background is the airport seaplane pier; note that the small Navy buildings that once lined the bulkhead had been removed by this time. (U.S. Coast Guard, "Air Station Brooklyn, Historical Remarks," http://www.uscg.mil/history/stations/airstabrooklyn1955_1_300.jpg.)



became effective on July 1, 1949 and required the Air Force to be subject to all rules and regulations set forth by the Navy.¹¹

In addition to these leased areas, the Navy also returned control of the ten-acre Air Station Brooklyn facility to Coast Guard soon after the end of the war. Under Treasury Department jurisdiction, the Coast Guard continued to operate the facility for squadrons of helicopters and fixed-wing aircraft, and for training. In 1946, the Coast Guard, eager to expand its operations, requested annexation of adjoining Navy property to the south on the former airport seaplane base in order to expand its apron and recreation facilities. The Navy did not initially grant the Coast Guard its request, citing the need to retain control over the flight path for

runway 12-30. The Navy also maintained critical aviation gas storage tanks in this area. By c.1948, the Navy granted the Coast Guard a lease for a 1.98-acre area instead of a sale.¹² Here, the Coast Guard would expand its apron by c.1950 (fig. 1.93) The Coast Guard subsequently sought permission to expand westward into the Navy's maintenance area, but the Navy denied this request. Navy officials stated that although they wanted to help meet the needs of Coast Guard, they did not want to jeopardize the integrity of the airfield.¹³

KOREAN WAR AND BEGINNING OF THE JET AGE, 1950-1959

The relatively sleepy post-war years at Floyd Bennett Field ended in June 1950 with the Communist invasion of South Korea, which brought about an escalation of Cold War hostilities that would continue over the next three decades. The Navy played a major role in the Korean War with over 1,177,000 Navy personnel serving in Korea and many more providing support on the home front. Korea was, however, only a part of the Navy's operations and it continued to support patrols elsewhere in the world as well as to maintain its extensive training operations at home.¹⁴ The outbreak of the Korean War heightened military activity at Floyd Bennett Field, although it remained far below World War II levels. The war resulted in the New York Air National Guard being recalled to active duty. In March 1951, they left Floyd Bennett Field for reassignment to March Air Force Base in California.¹⁵ The Navy probably reassumed use of the Hangar Row facilities during the war, although it continued the lease of hangar 3 to the city Police Aviation Bureau.



Figure 1.94: View looking northwest across the Hangar Row apron at a squadron of Navy personnel in formation during the Korean War, October 9, 1950. The purpose of the large panel above the hangar 3 lean-to is not known. (Photograph 22747, Gateway National Recreation Area Museum Collection.)

Floyd Bennett Field's role in the Korean War and the subsequent years of the Cold War was primarily to provide a ready fleet in case of a national emergency. A key part of this mission was to maintain well-trained and ready reserve forces. In c.1950, the field was once again redesignated Naval Air Station, New York, but remained part of the Naval Air Reserve System. Three naval air reserve squadrons, thirty-four aircraft squadrons, and two Marine air reserve squadrons were recalled to active duty upon the start of the war in 1950 (fig. 1.94). The heightened military

use of the field persisted after the end of the Korean War in 1953, but primarily for training purposes. In 1959, for example, there were fifty-six officers and 646 enlisted men stationed at Floyd Bennett Field, with over 3,000 reservists arriving on weekends to maintain readiness for active duty.¹⁶

The landscape during this time changed not only through heightened military use, but also through the introduction of new technology, namely the jet airplane. While jets were developed during World War II, it was only during the Korean War that the Navy adopted the aircraft into its first-line inventory. Jets were of course much faster than propeller planes, but also typically lighter. However, due to their speed and strong backdraft, jets required longer landing strips and wider flight paths. They also required a different, kerosene-based fuel as opposed to high-octane gasoline or aviation gas (AVGAS) that was used for propeller planes.¹⁷

With the start of the Korean War, the Navy undertook a program of improvements at NAS New York that included lengthening of runways, modifications to roads and aprons, addition of jet-fuel storage tanks, and construction of new communications facilities and barracks. These improvements, amounting to more than \$3,490,000, were necessary to adapt the field to jet aircraft and to replace temporary World War II construction.¹⁸ Work began following award of the first contract in July 1951 and was completed within two years. Within the airfield, the improvement program lengthened runway 1-19, one of the WPA-built runways, from 5,000 to 7,000 feet. This lengthening extended beyond runway 6-24 toward Mill Basin at the northeast corner of the airfield, and beyond runway 15-33 at the southwest toward Flatbush Avenue.¹⁹ (fig. 1.95). The runway was extended in concrete, and the southwest approach was surfaced in a type of soil cement, probably meant to prevent erosion from heavy jet engine back draft, rather than for landing or takeoff. Similar soil cement may have also been added along the edges of the northeast extension of the runway.²⁰



Figure 1.95: Aerial photograph of Floyd Bennett Field taken in March 1954 showing changes made as part of the improvement program undertaken during the Korean War between 1951 and 1953. The boundary of the original municipal airport was still clearly evident in the surface of the airfield. (Photograph 635754, Still Pictures Division, National Archives II, annotated by SUNY ESF)

The soil cement surface at the southwest approach to runway 15-33 crossed the main entrance drive to the air station that had been built during World War II. This conflict apparently led the Navy in c.1951 to build a new entrance farther south that would avoid the runway and provide a more direct route to the main barracks area and Jamaica Bay where the Navy had concentrated its primary facilities (see fig. 1.95). The new entrance extended on alignment with the main drive (Floyd Bennett Boulevard) from Flatbush Avenue to a chain-link and barbed-wire gate at Aviation Road where there was a large sign that read “U.S. Naval Air Station New York – Naval and Marine Air Reserve – Squadrons and Units Attached” (fig. 1.96). This new entrance road featured a dual carriageway with a planted median, a sentry booth (207), and a gate house (135). The Navy also built a parking lot to the rear of the gate house, south of the entrance drive. Soon after the entrance was built, the Navy put a jet aircraft on permanent display (inventoried as building 264) to the south of the drive, serving as a prominent symbol of NAS for traffic along Flatbush Avenue.²¹



Figure 1.96 (top): View northeast from Flatbush Avenue along the new entrance to NAS New York constructed in c.1951 with the aircraft display (264) in the foreground, photographed c.1955. (Photograph 30196, Gateway National Recreation Area Museum Collection.)

Figure (1.97 bottom): View looking south at the recently completed barracks complex (29-32) within the main barracks area, June 10, 1952. In the distance is the marginal wharf along Rockaway Inlet. (Photograph 80-G-442812, RG 80, Series G, National Archives II.)

Within the main barracks area, the primary improvement that the Navy made during the Korean War was the construction of a new barracks complex that was apparently needed to replace the temporary barracks that had been removed in the late 1940s and possibly relocated to the west barracks area for use as state veterans' housing. The complex, built north of the dispensary (87), consisted of four buildings (129-132) built by the Albert A. Lutz Co. of New York City probably to a standard Navy design for permanent construction (fig. 1.97).²² The complex included two barracks, a mess hall, and a small heating plant building, all connected by breezeways. The barracks were long, two-story buildings with hipped roofs, similar in massing to the earlier World War II barracks but built of steel and masonry with brick sheathing. The mess hall was also built of steel and brick but had a flat roof. Other buildings and structures added within the main barracks area during the Korean War era included a public works garage (258) south of the west recreation building on the site of barracks no. 9, and jet-fuel storage tanks (190, 191) and pump house (220) along the marginal wharf.²³

Along Jamaica Bay, the two massive hangars of the Naval Aviation Patrol Base and the Coast Guard hangar continued to dominate the landscape (fig. 1.98). During the Korean War era, the Navy made several mostly minor changes to adapt the facility to use by jet aircraft. New or enlarged lean-tos were added to Hangars A and B, and the apron was nearly doubled in size by an extension to the north (see fig. 1.93). This enlargement included the addition of a "jet engine run-up stand" at the north end of the apron. The extension required the removal of a storage/scrap yard, which was rebuilt in the undeveloped area farther north, along with two "ready ammunitions magazines" (168, 169) aligned with taxiway 6.²⁴ Either during or shortly after the Korean War, the Navy removed the small buildings



Figure 1.98: Looking northwest along the Jamaica Bay shoreline of NAS New York, summer 1953. Visible is the airport seaplane pier, Navy boat basin pier, and Coast Guard Air Station with its barrel-vaulted hangar, and the two massive hangars of the Aviation Patrol Base to the right. In the distance are visible some of the new antennae towers installed during or shortly after the Korean War. (Photograph 19458, Gateway National Recreation Area Museum Collection.)

that lined the bulkhead along the boat basin south of the Coast Guard air station, including the boathouse (35), ammunitions storage locker (41) and furniture maintenance building (125) (see fig. 1.93). It may have done this to reestablish the flight-path clear zone for runway 12-30, or to provide additional space for the adjoining recreational area, which was used by both Navy and Coast Guard personnel.²⁵ In the ammunitions-communication area north of the airfield, the Korean War improvements included two new radio towers. A total of eleven new towers would be added by 1956, replacing the four World War II-era towers.²⁶

Unlike the Navy, the Coast Guard did not invest in major improvements to its air station during the Korean War, although it apparently had planned to do so but was thwarted by the Navy's denial to annex adjoining property in the immediate post-war years. Improvements were limited to expansion of the apron onto the two-acre area leased from the Navy, construction of a small hangar on the new apron, and replacement of the timber seaplane ramp with a new concrete ramp that incorporated a helicopter landing pad. It was probably during the late 1950s that the Coast Guard erected a small pyramidal monument in the grounds to the north of its main hangar.²⁷

Toward the end of the Korean War and the years after, the Navy once again turned to leasing out portions of Floyd Bennett Field to other agencies. In 1952, the Navy issued an outgrant of twenty-eight acres to the U.S. Army at the south side of the naval air station along Rockaway Inlet. This area included the seaplane parking area and seaplane ramp A (facilities the Navy no longer needed), as well as the two houses designated as Married Officer Quarters A and B, and the Officers' Mess Building. The permit specified that all Army facilities had to be self-sustaining and that a security fence had to be installed around the property. The Army, which

planned on developing the site as an Armed Forces Reserve Center, apparently did not execute its plans during the 1950s, although it may have occupied the existing buildings.²⁸

In addition to the Army, other agencies continued to have a presence at the air station, including the city Police Aviation Bureau which remained in hangar 3 in Hangar Row. The state Housing Authority administered the veterans' housing in the west barracks area until 1953, at which point more permanent veterans' housing had probably been developed outside of the field. The Housing Authority had been using part of its facilities as an annex to Public School 207. Not wanting to dissolve this arrangement, the Navy gave control of the building to the city Board of Education in 1953.²⁹ The south cluster of four buildings was removed by 1955, and the north cluster of six, including the two World War II barracks (80, 81), was removed by 1960. One building was apparently relocated to the east side of Aviation Road (267).³⁰ The only other buildings remaining by this time in the west barracks area were the sewage plant and incinerator (58, 59, 60), and a pump house (154) built in c.1950.

Figure 1.99: Air National Guard jets on the Hangar Row apron, view looking northwest with the World War II-era hangars 9 and 10 in the background, c.1960. The sign on the hangar gable reads "New York Air National Guard." (Courtesy of Rodney Martin, Historic Floyd Bennett Field website, http://www.geocities.com/floyd_bennett_field/coldwar.html.)



In 1956 following the end of the Korean War, the Navy decided to once again lease Hangar Row to the U.S. Air Force for use by the New York Air National Guard. Differing from the previous lease, the Air Force was granted use of the Administration Building and all but one of the hangars including the two wood-frame hangars built during World War II (fig. 1.99). Hangar 3 remained the home of the city police. The Air National Guard did not reopen the municipal airport entrance in front of the Administration Building and instead used the new Navy entrance built in c.1951. The diagonal driveways remained closed off by chain-link fence, and although many of the original plantings remained, individual shrubs along the

drives had been removed by this time and the others were becoming overgrown (see fig. 1.77). The only substantial change to Hangar Row during the Korean War and remainder of the 1950s was the addition of a steel-truss beacon tower in 1957, placed at the northwest corner of the entrance area along Flatbush Avenue.³¹

VIETNAM WAR ERA THROUGH DECOMMISSIONING, 1959-1972

The beginning of the Vietnam War, a conflict in which the United States aided South Vietnam from Communist takeover, inflicted an enormous toll on the U.S. military over the sixteen-year course of the conflict that started in 1959, and in particular during intensive American troop involvement that began in 1965.

Figure 1.100: Aerial photograph of Floyd Bennett Field, c.1967, showing expanded Hangar Row apron and runway 15-33 that had been converted to a taxiway dating. Changes made to the airfield since c.1960 included lengthening of runway 6-24, construction of taxiway 8, and development of mobile home courts in the west barracks area. The photograph also shows the Air National Guard's recently completed nose hangar (265) built north of the Administration Building, and the ranch houses (268-270) and city school building (272) in the main barracks area. (Uncatalogued photograph, RG 80, National Archives II.)

Unlike the Korean War, however, the Vietnam War did not cause the Navy to reinvigorate its forces and facilities at NAS New York, but rather to maintain its reserve training operations much as it had during the previous decade. By 1970, the Navy still had 2,132 reservists and 558 active duty officers and men stationed at NAS New York, along with 150 active Marines and 600 Marine Reservists, plus 298 civilian employees, numbers comparable to the 1950s. The busiest times at the field through the 1960s were the weekends, when reservists made as many as 300 flights a day from its runways.³² In addition to the Navy, the New York Air National Guard represented the other major military use of Floyd Bennett Field through the 1960s, continuing its use of Hangar Row that began with the Navy's lease renewal in 1956. Like NAS New York, the Air National Guard's mission was to provide training to equip operationally ready combat support units and qualified personnel for active duty. The Coast Guard also maintained its air station throughout this period.³³

During the 1960s, the Navy continued to make minor changes to the field to improve its use for training and use by jet aircraft. In c.1960, the Navy lengthened





Figure 1.101: Looking east across Hangar Row showing the Air National Guard's nose hangar (265) built between the Administration Building and hangars 5-6 in 1965, from a later photograph, c.1992. In the rear is the apron that was enlarged by paving over turf between the taxiways most likely as part of the hangar construction. The World War II-era wing on the Administration Building was removed in c.1979. (Photograph 18888, Gateway National Recreation Area Museum Collection.)

runway 6-24 to 5,800 feet, making it the second longest after runway 1-19, which had been extended during the Korean War in c.1952. Runway 6-24 was extended east toward Jamaica Bay and required some filling into the bay, which was retained by a timber bulkhead (fig. 1.100). As with runway 1-19, soil cement was added at the ends of the runway. A new taxiway, designated #8, was built to connect with the end of runway 1-19.

These improvements to the field were demanded not only by the Navy's training programs, but also by those of the New York Air National Guard and city Police Aviation Bureau based at Hangar Row. While the police apparently had adequate space at hangar 3, the propeller-era design of the original municipal airport hangars did not prove adequate for the Air National Guard's fleet of jets. While the jets were typically stored outside on the apron, interior space was still necessary to perform maintenance on the planes. To provide this needed space, the Air National Guard built a new hangar on the old north parking lot between the Administration Building and hangars 5 and 6 in 1965 at a cost of \$1,700,000 (fig. 1.101, see also fig. 1.100). With its markedly contrasting architecture consisting of exterior triangular trusses, the hangar was designed only to provide cover for the nose of the plane, a type of structure known as a nose hangar. The adjoining area was repaved and concrete walks were built to access the west side of the building. In order to make room for the nose hangar, the WPA-built field house (2) constructed in 1937-1938 was demolished. The ancillary drive off Flatbush Avenue was also removed, but the two diagonal drives were retained, although they remained closed.³⁴

Probably to improve aircraft circulation to the nose hangar, the Navy approved changes to the adjoining apron and taxiway system. In c.1965, the Hangar Row apron was expanded east toward runway 15-33 by paving over the areas of grass between the short taxiways that connected the runway with the apron (see figs. 1.100, 1.101). This created one expansive rectangular area of pavement where large aircraft could be parked, much like the apron at the Aviation Patrol Base

that the Navy expanded for jet use during the Korean War. In turn, runway 15-33, one of the two original runways dating to the municipal airport period, was redesignated as taxiway 10. This change was probably necessary due to the runway's proximity to the apron.³⁵

In the main and west barracks areas, the Navy built few new facilities during the Vietnam War era, and those that were built generally replaced or supplemented temporary World War II construction. In c.1960 the Navy built three small ranch-style houses south of the officers' club near the old Rockaway Inlet seaplane base. Designated as Married Officer Quarters (Buildings 268-270), these houses were located within the area to be leased to the Army for development of an Armed Forces Reserve Center (see fig. 1.100). The Army, however, had not yet developed its facility and the Navy still apparently controlled this land.³⁶ Soon after these houses were built, the Navy introduced mobile homes to the field, possibly to accommodate weekend reservists who could bring their own mobile homes (RVs or trailers) instead of staying in World War II housing in the remaining barracks. A complex of twenty-four mobile home courts, organized in clusters off a looped drive, were built near Rockaway Inlet and the west barracks area (see fig. 1.100).³⁷ The four earlier buildings at the site, used by the state to house veterans, had been removed several years before.

Another change to the main barracks area came in c.1967, when a large, three-story school building was constructed along the south side of the World War II-era dispensary near the marginal wharf (see fig. 1.100). This flat-roofed building, faced in brick and colored window walls, may have been built to replace a school facility (PS 207) that operated in the west barracks area since the end of the World War II. Whether the Navy or the city Board of Education erected the new building is not known (it was given a Navy classification, Building 272), but it was located on Navy land rather than a leased parcel.³⁸ The school was built around the same time that the adjoining dispensary was replaced with a new building south of the Navy headquarters in Building 69. The new dispensary (#275, later park police headquarters) was a contemporary one-story brick and window-wall building with a low-pitched gable roof. The old dispensary was demolished except for one small wing that was retained for use as a bath house to service an outdoor pool constructed on the site in c.1970.³⁹

Soon after the new dispensary was completed, the nearby former World War II Enlisted Men's Mess Hall—one of the largest of the World War II-era buildings—burned to the ground in the winter of 1968-1969 (fig. 1.102). The Navy soon cleared away the debris, but left the concrete foundation. With the loss of the mess hall, the only remaining World War II-era buildings in the main barracks area were the Navy headquarters building (69), two adjoining barracks (62, 72),



Figure 1.102: View taken in 1969 looking west across the main barracks area showing remains of the former Enlisted Men's Mess Hall that was lost to fire in the winter of 1968-1969. The building at the upper left of the mess hall is the new dispensary (275) built in c.1968; at the bottom of the photograph are the brick barracks complex (129-132) built during the Korean War. Note the still very open character of the landscape. (Uncatalogued photograph, RG 80, National Archives II.)

the west recreation building (70), the former Officers' Mess Hall (73), and the sprawling Bachelor Officers' Quarters (68), plus several smaller buildings. A year after the fire, the Navy developed a second mobile home court in the lawn area in front of the mess hall, perhaps to make up housing lost in the mess hall fire.

Not long after the dispensary and other improvements had been built at Floyd Bennett Field in the latter 1960s, the Navy decided to close NAS New York, ending its nearly four decades at the Barren Island

site. Although still an active Navy and Air Force reserve center at the time, the Navy publicly cited budget restraints as the reason for closing the installation, although ongoing conflicts with commercial traffic from JFK were also an issue.⁴⁰ The financial restraints had stemmed from the country's massive expenditure on the Vietnam War and other Cold War fronts, which forced the Department of Defense to institute a widespread base realignment and closure program across the country. The closings were intended to reduce the military's base structure that had been created during World War II and the Korean War.⁴¹ Many other installations across the New York City area were also impacted by the base realignment and closure, including nearby Fort Tilden on the Rockaway Peninsula and Fort Hancock at Sandy Hook, New Jersey.

By April 1970, the Navy had announced that the official closing of NAS New York would occur at the end of June 1971. On April 4, 1970, 1,500 Naval Air Reservists stood at attention in one of the hangars for the field's final formal inspection.⁴² The closing of NAS New York impacted the New York Air National Guard, which had to vacate the Hangar Row facilities that it leased from the Navy. The Army, however, would retain its outgrant along Rockaway Inlet for its long-planned development of an Armed Forces Reserve Center, which had yet to be built, and the city Police Aviation Bureau would also remain at the site. While the Coast Guard was not directly impacted by the closing of NAS New York since it was under separate federal ownership, it was forced in 1971 to limit its operations to helicopters, given that the Navy had closed down the control tower and runways.⁴³

Despite the closing of NAS New York, the Navy retained a presence at the field, although much reduced. In c.1970, it designated Hangar A at the Aviation Patrol

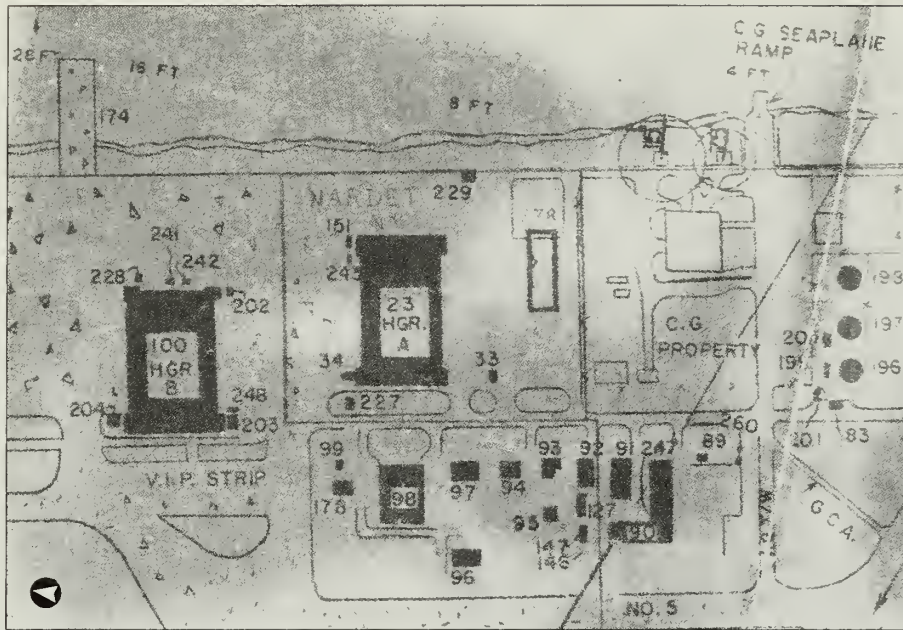


Figure 1.103: A 1960 plan of NAS New York with c.1970 annotation indicating boundaries of NARDET within the former Aviation Patrol Base. Also note addition of Tylunas Hall (Building 278) which was completed in 1970 at the site of two World War II-era barracks. (Detail, U.S. Navy, "Naval Air Station New York, Brooklyn, N. Y. General Development Map," 16 February 1960 updated to c.1970, map 326753-1, Gateway National Recreation Area Museum Collection.)

Tylunas Hall, named in honor of Navy Lieutenant Commander John F. Tylunas who had died in an accident two years earlier.⁴⁴

While NAS New York was officially decommissioned in June 1971, the Navy retained ownership of the site for another year and a half. During this time, the field was desolate, with only marginal use by the Coast Guard and city police department helicopters. City and federal agencies were, however, busy working out agreements for future ownership and development. By the fall of 1972, prospects were certain that the field would be transferred to National Park Service administration as part of the newly established Gateway National Recreation Area.⁴⁵

LANDSCAPE CHARACTERISTICS, 1972 (DRAWING 1.4)

At the end of the Navy's ownership of Floyd Bennett Field in 1972, the landscape had undergone numerous changes during the preceding twenty-nine years of the Cold War, particularly within the main barracks area on Barren Island. Despite new construction and the loss of numerous buildings, however, the field still retained the open, expansive, and barren feeling that had long characterized the landscape. Unlike the earlier World War II and municipal airport periods when extensive areas of fill were created and massive building programs were carried out, the landscape did not undergo any significant transformation when viewed from afar.

The following characteristics describe the landscape in its final years under Navy ownership between c.1970 and 1972. After the decommissioning in June 1971, the

Base along Jamaica Bay together with a small surrounding area as Naval Air Reserve Detachment New York (NARDET NY) (fig. 1.103). In preparation for the operation of NARDET NY, the Navy made some improvements to the facilities. The site was fenced in, and in 1969-1970, the two World War II-era barracks south of Hangar A were demolished and replaced with a new training and office building completed in November 1970. The tan-brick flat-roofed building was dedicated as

condition of the landscape probably declined as the Navy curtailed maintenance and use of the site.

Natural Systems and Features

By the early 1970s, natural systems were beginning to renew their presence on the heavily engineered landscape, although they still remained a minor characteristic. Natural maritime systems were evident on portions of the Jamaica Bay and Mill Basin shoreline, including sand beach and thin fringes of tidal estuary along the shoreline without bulkheads. In the area north of the original airport that was expanded by the Navy during World War II, natural succession was advancing by 1972. Because this land was not surfaced in turf, the land had become covered with natural grasses and scattered shrubs and thickets were evident by the late 1960s. The Navy may have mown these rougher areas occasionally to keep sight lines open on the airfield, but following decommissioning in June 1971, this maintenance probably ceased, leading to accelerated natural succession. Still, by 1972 there were no woods in the landscape (see fig. 1.100).

Spatial Organization

The spatial organization of Floyd Bennett Field in the early 1970s retained the overall open, expansive character that existed during World War II. Spaces within the landscape were created primarily by buildings, structures, and circulation features. These defined the airfield, Hangar Row, the Aviation Patrol Base and Coast Guard Air Station, ammunitions-communication area, main barracks area, and west barracks area. Changes in spatial character within the airfield and Hangar Row since 1945 resulted from addition of the nose hangar and enlargement of the Hangar Row apron in 1965 (see fig. 1.100). The spatial character of the Aviation Patrol Base was altered with the nearly doubling in size of the apron and loss of the two barracks. The most significant changes in spatial character occurred through removal of buildings in the main barracks area, which resulted in loss of the geometric courtyard arrangement of the two enlisted men's barracks complexes. The remaining multi-winged Bachelor Officers' Quarters and Korean War-era barracks complex continued to define small courtyard spaces within the larger landscape. The west barracks area likewise was noticeably different due to loss of two barracks and addition of the mobile home court and new entrance road off Flatbush Avenue.

Land Use

In 1972, only a small portion of Floyd Bennett Field—NARDET NY and the Coast Guard Air Station Brooklyn—remained an active military or quasi-military aviation installation. However, three years earlier prior to decommissioning, most

of the field retained the military aviation uses that had characterized the landscape since 1941. The New York City Police Aviation Bureau remained at Hangar Row, where it had a presence on and off for most of the field's history. Although the Army secured an outgrant in 1952 from the Navy to operate an Armed Forces Reserve Center south of the main barracks area, by 1972 it had apparently not yet developed the facility. Non-military uses that probably remained on the site in 1972 were limited to the city school at Building 272 and informal recreational uses by city residents at the site's ballfields and other recreational facilities.

Cluster Arrangement

Most all of the new development that occurred during the Cold War retained the earlier development patterns of Floyd Bennett Field that aligned with the flight-path clear zones. The clusters of development included Hangar Row, the Aviation Patrol Base and the Coast Guard Air Station along Jamaica Bay, and the main barracks area on Barren Island, although the latter had lost some of its cohesiveness due to building demolition. The west barracks had largely disappeared as a distinguishable cluster by 1972, with only one barracks (267), a pump house (154), and the sewage plant and garbage incinerator buildings (58, 59, 60) remaining. The mobile home courts built in c.1965, although probably not used in 1972, extended well into the flight-path clear zone for runway 15-33, which at the time the courts were built was not an active runway.

Topography

By 1972, the topography of Floyd Bennett Field had undergone little change since 1945. The only notable alteration was a small area of fill that was constructed in c.1960 at the confluence of Mill Basin and Jamaica Bay to allow for lengthening of runway 6-24. There were small berms constructed around the fuel oil tanks that served as containment areas in case of spills. The natural sand beach along Jamaica Bay had probably also shifted over the years leading to some minor topographic changes to the landscape.

Vegetation

Managed plant materials at Floyd Bennett Field in the early 1970s remained limited largely to the ornamental trees and shrubs at the former airport entrance in front of the Administration Building. Many of the shrubs around the Administration Building had either become overgrown or were removed. The once neatly sheared hedges lining the diagonal entrance drives were overgrown, and the individual shrubs had been removed. Lawn was maintained in the entrance area as well as in the west barracks area. The original part of the airfield was mown, as were strips along the runways to prevent encroachment

of obstructing vegetation, although some of this mowing may have ceased after the decommissioning in June 1971. The only vegetation in the west barracks area aside from turf was some widely scattered shrubs and small trees, including some foundation shrubs of unknown species (see fig. 1.102). There were also yews in the median of the main entrance off Flatbush Avenue, and foundation plantings and specimen trees around the Coast Guard main hangar and Tylunus Hall (278) at the NARDET base.

Circulation

The overall circulation system at Floyd Bennett Field in the early 1970s remained little changed from World War II with a few notable exceptions. The system included the runways and taxiways, aprons, roads, parking lots, and sidewalks. Alterations to the system were mostly the result of changes in use, notably the introduction of jet airplanes during the Korean War and the end of seaplanes in years following. Thus, seaplane ramp B at the Aviation Patrol Base and seaplane ramp A and parking area along Rockaway Inlet fell out of use. The latter was designated for redevelopment by the Army as an Armed Forces Reserve Center in 1952, although this development did not occur by 1972. The Coast Guard's seaplane ramp was rebuilt to accommodate helicopters in c.1950.

Runway 1-19 was lengthened to 7,000 in c.1951, and runway 6-24 was lengthened to 5,800 feet in c.1960 to accommodate jet aircraft. Areas adjoining the ends of the runways were surfaced in soil cement, probably to hold down the surface against the strong backdraft of jet aircraft. Runways 1-19 and 6-24 served as the two primary landing and takeoff strips, with 12-30 apparently serving a secondary function. Runway 15-33, the runway parallel to Hangar Row, was used as a taxiway that provided access to an expanded apron adjoining the Air National Guard's nose hangar built in 1965. The pavement surface and striping had been changed on most of the runways since World War II. The introduction of jets and lengthening of runways 1-19 and 6-24 also led to changes to adjoining circulation features, including the addition of taxiway 8 and realignment of the patrol road through the ammunitions-communication area in c.1951. In the Aviation Patrol Base along Jamaica Bay, the apron was nearly doubled in size to allow for storage and use of jet aircraft; two new short taxiways connected the expanded apron to taxiway 6.

One of the most prominent circulation changes during this period was the construction of a new entrance to NAS New York in c.1951; it extended from Flatbush Avenue and aligned with the main road (Floyd Bennett Boulevard) through the main barracks area. This single entrance provided access to the entire base. The west end of the patrol road was realigned around the same time to extend to Hangar Row rather than Flatbush Avenue, thus completing an interior

loop. The earlier World War II-era entrance at the south end of Hangar Row was closed, and the original diagonal drives at the former airport entrance also remained closed. As part of the new entrance, a parking lot was built near the main gate, but this was apparently removed by c.1965. A loop drive was built off the south side of the entrance drive around an aircraft that was positioned for public display. This was probably removed by 1972.

Within the main barracks area, the overall road and sidewalk system remained intact from the World War II period, but a number of ancillary drives and sidewalks were removed with building demolition, such as the walks leading up to the dispensary removed in c.1968 and the enlisted men's barracks removed in the 1948. Some of the roads were rebuilt with curbs. The development of the mobile home courts in c.1970 included the addition of an irregular complex of drives and cul-de-sacs in the lawn in front of the main mess hall (building 67). Similar drives were added for the mobile home court that was built at the south end of the west barracks area in c.1965.

Buildings and Structures

The landscape characteristic that changed most during this period was buildings and structures, particularly within the main barracks area (see Table 1.2 at the end of this section for a complete period building list). Here, the Navy removed eight of the temporary type World War II-era enlisted men's barracks in 1948, and may have relocated them to the west barracks area for use as state veterans' housing, supplementing the two barracks that were there from World War II. The Navy also added a new complex of brick-faced barracks (29-32) at the east side of the main barracks area during the Korean War in c.1952 (see fig. 1.97). Other housing changes included the addition of three ranch-style houses (268, 269, 270) for use as Married Officer Quarters in c.1960 north of the seaplane parking apron. In c.1960, mobile home courts for use with RVs or trailers were introduced as a new housing type, with the first complex built at the south end of the west barracks area in c.1965, and the second in front of the main mess hall (67) in the main barracks area in c.1970. This mess hall, which may have been used for residential purposes as well, burned to the ground in the winter of 1968-1969 (see fig. 1.102). Other building changes included a new dispensary (275) built at the west side of the main barracks area in c.1968, replacing the World War II-era dispensary (87) near the marginal wharf. This building was demolished except for one wing that was converted into a bath house associated with a swimming pool built on the site by c.1970. By the early 1970s, the only major World War II-era buildings remaining in the main barracks area were the two recreation buildings (70, 74), three barracks (62, 69, 72), one of which was converted for use as the Navy administration building; two residences built as Married Officer Quarters (157, 158); the Officers' Mess Hall (73); the sprawling multi-winged Bachelor Officers'

Quarters (68); and Power Plant A (86) and laundry (85) near the marginal wharf. Within the west barracks area, all major buildings had been removed by 1972 with the exception of one barracks (267), a pump house (154) and the field's garbage and sewer treatment plant (58, 59, 60).

Within Hangar Row, major changes included the construction of a steel-truss beacon tower (176) in the former airport entrance area in c.1957, and the addition of the nose hangar (265) adjoining the Administration Building, constructed by the Air National Guard in 1965 (see fig. 1.101). This new hangar required the demolition of the Field House (2) built in 1938. The National Guard continued to use the two temporary World War II hangars 9 and 10 (46, 51) at the north end of Hangar Row. At the south end of Hangar Row, the frame barracks building (27) and Celestial Training Building (53) were demolished along with several smaller buildings, but the Dope Shop (26), fire house (50), and Synthetic Training Building (54) remained standing.

In the airfield, the only notable change to buildings and structures during this period was the demolition of the two Sperry floodlight towers in c.1948. The rocking platform may have also been removed from the east side of the field, but the tetrahedron (208) remained. In the ammunitions-communication area, most of the World War II-era ammunitions magazines probably fell out of use during this period. The four World War II-era radio towers were replaced with eleven new towers in the mid 1950s.

In the Aviation Patrol Base, building changes were limited during the Korean War improvement program largely to the addition or enlargement of lean-tos at Hangars A and B. The most substantial change came with the commissioning of NARDET NY in c.1970, when the two World War II-era barracks (24, 38) were demolished and replaced by the tan-brick Tylunas Hall (278), dedicated in November 1970. Many small utility and storage buildings were added to the Aviation Patrol Base during this period, including several in the undeveloped area north of the base, accessed off the patrol road.

In the maintenance area that bordered the Aviation Patrol Base, all of the buildings from World War II remained, with the exception of the temporary Quonset huts. A small storage building and shop (146, 147) and a gasoline filling station (260) were added during this period. In the former boat basin/recreation area to the south in the flight-path clear zone for runway 12-30, all buildings and structures were demolished in the 1950s, including the pier and boat basin, leaving just the city pier and series of fuel storage tanks. The ballfields built during World War II and running track that was added in the late 1940s had also been removed.

At the Coast Guard Air Station, changes to buildings and structures during this period included construction of a nose hangar in c.1955 on the parcel leased from the Navy, a large storage building adjacent to the garage in 1959, and a new pier at the north end of the site in c.1960. The Coast Guard built a small boathouse at the foot of this pier in 1969. Two small ammunitions lockers and a paint locker were also added to the site during the 1950s. In c.1950, two radio towers were installed on the beach below the bulkhead to replace the earlier towers north of the main hangar.⁴⁶

Views and Vistas

By the early 1970s, the landscape of Floyd Bennett Field continued to be characterized by expansive, panoramic views across the site and adjoining waters. Views were only restricted by large buildings and by the row of trees along Flatbush Avenue. There were no woods on the site to block views. Expansive views were critical to the functioning of the site as an airfield.

Constructed Water Features

Constructed water features were first introduced into the landscape during this period through the addition of a swimming pool constructed in c.1970 at the site of the dispensary (87) demolished a few years earlier. One of the wings of the dispensary was retained as a bath house.

Small-Scale Features ⁴⁷

Small-scale features at Floyd Bennett Field in the early 1970s included the perimeter chain-link and barbed-wire fence that had been installed during World War II. This fence extended along Flatbush Avenue across the original airport entrance drives as well as the World War II-era entrance. This fence was altered in c.1951 with a gate to accommodate the new entrance off Flatbush Avenue. At this gate was a large sign with the name of NAS New York and a secondary, smaller sign indicating the direction to the other agencies operating at the site. Other small-scale features included a flagstaff in the front walk of the Navy headquarters building (69) probably installed in 1946, and the original airport flagstaff and cast-iron light standards at the entrance area in front of the Administration Building. There were no overhead utility lines, but instead underground utility lines and vaults. Landing and takeoff lights lined the runways, but there were no street lights on the roads (see fig. 1.102).

At the Coast Guard Air Station, a memorial monument was built in an open area at the north side of the site between 1955 and 1959, and a flagstaff was installed opposite the north entrance to the main hangar between 1963 and 1973.⁴⁸

TABLE 1.2

FLOYD BENNETT FIELD COLD WAR-PERIOD BUILDING/STRUCTURE KEY, (C.1972)

Sources: "Naval Air Station New York, General Development Map," 10 April 1962 updated to c.1970; "Map of U.S. Naval Air Station New York, N. Y. Showing Conditions on June 30, 1947;" GATE List of Structures, 2007. Italics indicate pre-1947 buildings.

NAS NEW YORK

1	<i>Administration Building</i>	60	<i>Sewage Treatment Plant</i>
2	<i>Demolished (former Field House)</i>	61 63-5	<i>Demolished (Barracks Nos. 1, 2-4, 6)</i>
3 - 22	<i>Hangar Row Hangars 1-8 (with lean-to, infill bldgs.)</i>	62	<i>CPO Club & Barracks (Former Barracks No. 2)</i>
24	<i>Seaplane Hangar A (APB/NARDET)</i>	60	<i>Demolished pre-1947</i>
24	<i>Demolished (APB Squadron Barracks 14)</i>	62	<i>Foundations (Mess Hall, destroyed by fire)</i>
25	<i>Demolished pre-1941</i>	68	<i>Bachelor Officers' Qtrs. & Enlisted Men's Barracks</i>
26	<i>Dope Shop & Sheet Metal Shop</i>	69	<i>Administration Building (former CPO Barracks No. 5)</i>
27	<i>Demolished (WAVES Barracks No. 12)</i>	70	<i>West Recreation Building</i>
28	<i>Demolished (TARA Hall - CPO Recreation Building)</i>	71	<i>Hobby Shop (Former Marines Garage)</i>
29	<i>Fire Pump House & Water Tank</i>	72	<i>Squadron OP MART Detachment (frmr. Barracks 15)</i>
30	<i>Sewage Ejector Pump House</i>	73	<i>Officers' Club (former Officers' Mess Building)</i>
31	<i>Demolished pre-1947</i>	74	<i>Navy Exchange (former EM Recreation Building)</i>
32, 33	<i>Gasoline Pump Houses (location of 32 unknown)</i>	75	<i>Sewage Pumping Station 'A'</i>
34	<i>Storage Building</i>	76	<i>Demolished (Barracks No. 10)</i>
35	<i>Demolished (Boat House)</i>	77	<i>Demolished (Barracks No. 8)</i>
36	<i>Salvage Building</i>	78	<i>Demolished (Barracks No. 9)</i>
37	<i>Equipment Shed</i>	79	<i>Demolished (Barracks No. 7)</i>
38	<i>Demolished (Squadron Bachelor Officers' Quarters)</i>	80	<i>Demolished (Barracks No. 13)</i>
39	<i>Demolished (Ground Support Shop)</i>	81	<i>Demolished (Barracks No. 11)</i>
41	<i>Demolished (Ammunitions Storage)</i>	82	<i>Vacant (former Heater House)</i>
42-45	<i>Ammunitions Lockers</i>	83-84	<i>Gasoline Storage Tanks Pump Stations</i>
46	<i>Hangar 9</i>	85	<i>Laundry</i>
47	<i>Paint Store House</i>	86	<i>Power Plant 'A'</i>
48	<i>Sick Bay</i>	87	<i>Bath House (Dispensary Remnant Wing)</i>
49	<i>Demolished (Boat Repair Shop)</i>	88	<i>South Service Substation</i>
50	<i>Fire House</i>	89	<i>Sewage Pumping Station 'B'</i>
51	<i>Hangar 10</i>	90	<i>PW Maintenance Garage (former Fire Station)</i>
52	<i>Demolished (WAVES Laundry)</i>	91	<i>Station Maintenance</i>
53	<i>Demolished (Celestial Navigation Training Building)</i>	92	<i>PW Shop (former Paint & Oil Storehouse)</i>
54	<i>Barracks (Former Synthetic Training Building)</i>	93	<i>PW Office (former Bombsight Storage)</i>
55	<i>See 255 (redesignated)</i>	94	<i>Technical Training Building (former Torpedo Storage)</i>
56	<i>Demolished (Public Works Office & Police Station)</i>	95	<i>Coast Guard Air Crew Facility (frm. Ordinance Shop)</i>
57	<i>Transformer Vault</i>	96	<i>Seabee Reserve Training Bldg (former Power Plant 'B')</i>
58	<i>Demolished (Garage—Aviation Free Gunnery)</i>	97	<i>Cold Storage & Commissary</i>
59	<i>Incinerator</i>	98	<i>Supply Storage (General Storehouse)</i>

99	<i>Pumping Station—Fire Protection</i>	141	<i>City Pier (new designation)</i>
100	<i>Hangar 'B' (former Seaplane Hangar)</i>	142	<i>Berthing (Marginal) Wharf (new designation)</i>
101	<i>Fuel Oil Storage Substation No. 2</i>	143	Building 69 Flagstaff (c.1946)
102	<i>Water Storage Pump House</i>	144	Demolished or unassigned number (c.1947-60)
103	<i>Lighter-Than-Air Facilities (abandoned)</i>	145	Gasoline Pump Station (c.1947-60)
104	<i>Storage Building (Misc.)</i>	146	Public Works Storage Building (1948)
105	<i>Demolished (Shotgun Range House)</i>	147	Public Works Storage Building (1948)
106	<i>Inert Storage</i>	148	Demolished (Shop Building, c.1947-60)
107	<i>Smoke Drum Storage</i>	149	Demolished or unassigned number (c.1947-60)
108	<i>S. A. Pyrotechnics Storage</i>	150	Demolished or unassigned number (c.1947-60)
109	<i>Ordinance Storage (former Practice Bomb Storage)</i>	151	Hangar A Line Operators Building (c.1950)
110, 111	<i>Fuse & Detonator Magazines</i>	152	Filling Station (c.1961)
112-115	<i>High Explosive Magazines</i>	153	<i>Airport Entrance Flagstaff (new designation)</i>
116	<i>Ammunition Magazine (former Warhead)</i>	154	Pump house (c.1952)
117	<i>North Service Substation</i>	155	Demolished or unassigned number (c.1947-60)
118	<i>Radio Transmitter Building</i>	156	Demolished or unassigned number (c.1947-60)
119	<i>Demolished (Direction Finder Station)</i>	157	Demolished or unassigned number (c.1947-60)
120	<i>Transformer Vault</i>	158	<i>Married Officer Quarters A (new designation)</i>
121	<i>Demolished (Unknown)</i>	159	<i>Married Officer Quarters B (new designation)</i>
122	<i>Demolished (PW Storehouse 'A' & Hospital Barracks)</i>	160	Demolished or unassigned number (c.1947-60)
123	<i>Demolished (PW Storehouse 'B')</i>	161	Demolished or unassigned number (c.1947-60)
124	<i>Demolished (Gas Distribution & Operation Office)</i>	162	Demolished or unassigned number (c.1947-60)
125	<i>Demolished (Furniture Maintenance Building)</i>	163	Demolished or unassigned number (c.1947-60)
126	<i>Paint Storage Building</i>	164	Baseball Field (c.1953)
127	<i>Demolished (Electrical Gear Shed)</i>	165	Demolished or unassigned number (c.1947-60)
128	<i>Demolished (Salvage Shed)</i>	166	BOQ Handball Courts (c.1953)
129	Brick Mess Hall (1952)	167	Demolished or unassigned number (c.1947-60)
130	Brick Barracks #1 (1952)	168	Ready Ammunitions Magazine (c.1958)
131	Brick Barracks #2 (1952)	169	Ready Ammunitions Magazine (c.1958)
132	Brick Barracks Breezeway (1952)	170	Aircraft Line Operator Building (c.1952)
133	Demolished or unassigned number (c.1947-60)	171	<i>Administration Building Wing (new designation)</i>
134	Demolished (Jet Fuel Loading Stand, c.1950-60)	172	Demolished (unknown c.1947-60)
135	Main entrance gate house (1952)	173	<i>Seaplane Ramp A (new designation)</i>
136	Demolished or unassigned number (c.1947-60)	174	<i>Seaplane Ramp B (new designation)</i>
137	Demolished or unassigned number (c.1947-60)	175	Demolished or unassigned number (c.1947-60)
138	Demolished or unassigned number (c.1947-60)	176	Beacon Tower (1957)
139	Demolished or unassigned number (c.1947-60)	177	Fire Pump House Second Water Tank (c.1947-60)
140	Demolished or unassigned number (c.1947-60)	178	<i>Pumping Sta. Water Storage Tank (new designation)</i>

179	<i>Water Storage Tank (new designation)</i>	217	Liquid Oxygen Facility (1959)
180	<i>Water Storage Tank (new designation)</i>	218	Demolished or unassigned number (c.1947-60)
181	Sleeve Antennae (5, c.1956)	219	Demolished or unassigned number (c.1947-60)
182	Low Frequency Antennae (4, c.1955)	220	Jet Fuel Pump Station (c.1951)
183	UFH/VFH Antennae (2, c.1955)	221	<i>BOQ Tennis Court (new designation)</i>
184	Demolished or unassigned number (c.1947-60)	222	<i>BOQ Tennis Court (new designation)</i>
185	Demolished or unassigned number (c.1947-60)	223	<i>BOQ Tennis Court (new designation)</i>
186	Demolished or unassigned number (c.1947-60)	224	Bus Stop Shelter (c.1961)
187	<i>Fuel Oil Storage Tank (new designation)</i>	225	Bus Stop Shelter (c.1961)
188	<i>Fuel Oil Storage Tank (new designation)</i>	226	Bus Stop Shelter (c.1961)
189	Optical Landing System (1959)	227	Hangar A Outbuilding (c.1947-60)
190	Jet Fuel Storage Tank (c.1951)	228	Hangar B Sonobuoy Storage (c.1952)
191	Jet Fuel Storage Tank (c.1951)	229	NARDET Paint Shop (c.1948)
192	<i>AVGAS Storage Tanks (new designation)</i>	230	Demolished or unassigned number (c.1947-60)
193	<i>AVGAS Storage Tanks (new designation)</i>	231	Demolished or unassigned number (c.1947-60)
194	<i>AVGAS Storage Tanks (new designation)</i>	232	<i>Demolished (storage building, c.1942)</i>
195	<i>AVGAS Storage Tanks (new designation)</i>	233	<i>Paint Locker (redesignated)</i>
196	<i>AVGAS Storage Tanks (new designation)</i>	234	Dope Shop Storage (c.1954)
197	<i>AVGAS Storage Tanks (new designation)</i>	235	ANG Sentry Booth (Admin. Building Entrance, c.1949)
198	<i>AVGAS Storage Tanks (new designation)</i>	236	ANG Sentry Booth (Admin. Building Entrance (c.1949)
199	<i>Motor Gas Storage Tank (new designation)</i>	237	Radio Transmission Area Shed (c.1948-60)
200	<i>AVGAS Pump Station</i>	238	Storage Building (c.1952)
201	Transformer Vault (c.1950)	239	Demolished or unassigned number (c.1947-60)
202	Hangar B Line Operators Building (c.1948)	240	Demolished or unassigned number (c.1947-60)
203	Hangar B Line Crew Shelter (1948)	241	Hangar B Portable Line Storage Shed (c.1952)
204	Hangar B Line Operators Building (1948)	242	Portable Storage Shed (c.1952)
205	Scrap Yard Shed or fuel station (c.1952)	243	Hangar A Portable Storage Shed (c.1952)
206	Oil Reclaiming Station (c.1952)	244	Portable Storage Shed (c.1952)
207	Main entrance sentry booth (c.1952)	245	Portable Storage Shed (c.1952)
208	<i>Tetrahedron</i>	246	Removed (Portable Storage Shed, c.1952)
209	New AVGAS Loading Stand (c.1952)	247	Shed or vault (c.1947-60)
210	Demolished or unassigned number (c.1947-60)	248	Hangar B Portable Storage Shed (c.1952)
211	Demolished or unassigned number (c.1947-60)	249	Demolished or unassigned number (c.1947-60)
212	Demolished or unassigned number (c.1947-60)	250	Enlisted Men's Handball Courts (c.1952)
213	Demolished or unassigned number (c.1947-60)	251	Demolished or unassigned number (c.1947-60)
214	Demolished or unassigned number (c.1947-60)	252	Demolished or unassigned number (c.1947-60)
215	Demolished or unassigned number (c.1947-60)	253	Demolished or unassigned number (c.1947-60)
216	Demolished or unassigned number (c.1947-60)	254	Bus Stop Shelter (c.1962)

255	WW II Entrance Sentry Booth (new designation)	279	Outdoor pool (c.1970)
256	Airport Entrance Bus Shelter (new designation)	280	Substation (c.1970)
257	Line Maintenance/Fuel Issue Building (c.1964)	281	Standby Generator Plant (c.1970)
258	Garage-A/C Crash Fire Station (c.1952)	Q1-Q5	Demolished (Quonset Huts)
259	Diesel Fuel Tank/Dispensing Stand (c.1964)	Buildings-Structures Below Not Numbered	
260	Maintenance Area Filling Station (c.1964)		Demolished (Sheet & Trip Shooting Houses, 5)
261	Transmitter Building (c.1961)		Demolished (Test Backstop)
262	Demolished or unassigned number (c.1947-60)		Airport Compass Rose
263	Radio Beacon, 3 poles (c.1964)		Navy Compass Rose
264	Aircraft Display (c.1964)		Demolished (Boat Basin Pier)
265	Nose Hangar (1965)		Demolished (Contractors' Pier)
266	A/C Wash Rack Building (c.1965)		Jet Engine Run-Up Stand (APB, c.1952)
267	Married Enlisted Men's Quarters (c.1948)		Main Barracks Area Mobile Home Courts (c.1970)
268	Married Officer Quarters C (c.1960)		West Barracks Area Mobile Home Courts (c.1965)
269	Married Officer Quarters D (c.1960)		
270	Married Officer Quarters E (c.1960)		
271	Station Signal (c.1965)		
272	NYC Board of Education Building (c.1968)		
273	Remote Revr. Building (c.1967)		
274	Generator Building (c.1967)		
275	New Dispensary (c.1968)		
276	Unknown shed or vault (c.1947-60)		
277	Transmission Antennae (3)/probably at Building 171		
278	Tylunas Hall (c.1970)		
U.S. COAST GUARD AIR STATION BROOKLYN			
CG-1	Main Coast Guard Hangar	Buildings-Structures Below Not Numbered	
CG-2	Coast Guard Garage		Coast Guard Seaplane Ramp (rebuilt c.1955)
CG-3	Coast Guard Barracks		Demolished (Coast Guard Pier)
CG-4	Engineer Store Room		Demolished (Original radio towers)
CG-5	North Pyro Locker (c.1955)		Quonset Huts
CG-6	Bosun Store Room		New Radio Towers (c.1950)
CG-7	South Pyro Locker (c.1955)		Finger Pier (c.1950)
CG-8	Paint Locker (1959)		Boat House (1969)
CG-9	?		
CG-10	Nose Hangar (c.1955)		
CG-11	?		
CG-12	Transformer Vault		
CG-13	Storage Building (1959)		

Acronyms

ACFT = Aircraft	NARDET = Navy Air Reserve Detachment (former APB)
ANG = Air National Guard	PW = Public Works
APB = Aviation Patrol Base (NARDET)	AVGAS = Aviation Gasoline (fuel)
BOQ = Bachelor Officers' Quarters	EM = Enlisted Men

Note: Six of the building numbers listed as "demolished or unassigned" (probably 209-216) were barracks constructed in the west barracks area in c.1948 and demolished prior to 1960. The rest of the demolished/unassigned number may have been assigned to piers or circulation features including runways, taxiways, and roads. These numbers are not indicated on the 1962 map of the Naval Air Station and therefore remain unknown.

ENDNOTES

- 1 Edward J. Marolda, "The U.S. Navy in the Cold War Era, 1945-1991," Navy Historical Center website, <http://www.history.navy.mil/wars/coldwar-1.htm>; Adrian Van Wyen and Lee M. Pearson, *United States Naval Aviation 1910-1980* (Washington, D. C. : Deputy Chief of Naval Operations and Commander, Naval Air Systems Command, 1981), 161.
- 2 The Floyd Bennett Task Force, "NAS New York 1941-1972," undated article, <http://kerrdrill.tripod.com/id3.html>.
- 3 Late 1940s photographs (80-G-396160, -396158, etc.) at the National Archives, College Park, Maryland (hereafter, NARA II) are labeled "U.S. Naval Air Station Floyd Bennett Field," despite that the field had been redesignated a naval air reserve training station. The NAS designation was returned in c.1950.
- 4 Aerial photograph of NAS New York, 16 August 1948, Photograph 80-G-396160, Still Pictures Division, NARA II.
- 5 Porter R. Blakemore and Dana C. Linck, "Historic Structures Report, Historical Data Section, Floyd Bennett Field, Gateway National Recreation Area, Volume 1" (National Park Service, Denver Service Center: Unpublished report, May 1981), 54, 165-166; aerial photograph of NAS New York, 12 March 1947, photograph 16176, Gateway National Recreation Area Archives, Fort Wadsworth (hereafter, GATE archives). No photographic documentation or information on the location of these navigational features has been found.
- 6 U.S. Navy, "Map of U.S. Naval Air Station New York, N.Y. Showing Conditions on June 30, 1947," GATE archives.
- 7 Letter, State of New York, Executive Department, Division of Housing to Public Housing Authority, 6 February 1946, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 824, NARA II.
- 8 Revocable Permit between the United States of America and the City of New York, Police Department, 17 September 1946, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 824, NARA II.
- 9 Blakemore and Linck, 72; "Airlines Lose Hope for Bennett Field," *New York Times*, 6 September 1947, 30.
- 10 "Airlines Lose Hope for Bennett Field."
- 11 Revocable Permit between the Department of the Navy and the Department of the Air Force, May 1949, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 825, NARA II.
- 12 Department of the Navy, "Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970, map 326753-1, GATE archives.
- 13 The Coast Guard made several more requests for additional property that were denied by the Navy, the last being in November 1954. Letter, J.J. Chew for the Chief of Bureau of Yards & Docks to the Chief of Naval Operations, 29 March

- 1946, and Letter, Assistant Chief of Bureau of Yards & Docks J.F. Jelley to Chief of Naval Operations, 26 December 1946, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 824, NARA II; Letter, Assistant Chief for Materials and Services, Bureau of Aeronautics C.E. Ekstrom, to Chief of Bureau of Yards & Docks, 17 November 1954, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 826, NARA II.
- 14 Marolda, "The U.S. Navy in the Cold War Era, 1945-1991."
- 15 Marolda, "The U.S. Navy in the Cold War Era, 1945-1991."
- 16 Blakemore and Linck, 72.
- 17 Marolda, "The U.S. Navy in the Cold War Era, 1945-1991."
- 18 "Floyd Bennett Fund Set, Navy Will Spend \$2,681,000 to Improve Air Station," *New York Times*, 25 May 1951, 23. The actual amount of the project exceeded the figure quoted by the *Times*.
- 19 Blakemore and Linck, 166.
- 20 Aerial photograph of Floyd Bennett Field, March 1954, Photograph 635754, Still Pictures Division, NARA II.
- 21 Blakemore and Linck, 166; "Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.
- 22 Blakemore and Linck, 166.
- 23 "Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.
- 24 "Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.
- 25 U.S. Navy, "Map of U.S. Naval Air Station New York, N.Y. Showing Conditions on June 30, 1947;" c.1955 photo of area along bulkhead without buildings, U.S. Coast Guard, "Air Station Brooklyn, Historical Remarks," undated article, http://www.uscg.mil/history/stations/airstabrooklyn1955_1_300.jpg.
- 26 Blakemore and Linck, 166; Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.
- 27 Aerial photograph of Floyd Bennett Field, May 24, 1956, Photograph 674699, Still Pictures Unit, NARA II; "Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970; Barbara Judy, "USCG Air Station Brooklyn Property Map 1936-1988" (Draft map prepared for Gateway National Recreation Area, 23 May 2008).
- 28 Revocable Permit between the Department of the Navy and the Department of the Army, 1952, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 826, NARA II; Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970. This map does not indicate that the area was used by the Army.
- 29 Letter, Commandant, Third Naval District R.H. Hillkoetter to Chief of Bureau of Yards & Docks, 3 November 1953, RG 71, Bureau of Yards and Docks, Navy Property Case Files Records, Box 826, NARA II.
- 30 Aerial photograph of Floyd Bennett Field, May 24, 1956; aerial photograph of Floyd Bennett Field, c.1967, unnumbered photograph, GATE archives.
- 31 Blakemore and Linck, 166.
- 32 "Phasing Out is Started at Floyd Bennett Field," *New York Times*, 5 April 1970, 90.
- 33 New York Air National Guard homepage, <http://www.dmna.state.ny.us/ang/nyang.php>. No information was found on the number of Air Reserve or Coast Guard personnel at Floyd Bennett Field during this time.
- 34 Blakemore and Linck, Historic Structures Report," 167.
- 35 Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970; Aerial photograph of Floyd Bennett Field, May 24, 1956 and c.1967. Lines on the 1960 map indicate that the enlarge apron was

tied to the nose hangar. No documentation was found on the location of taxiway 9 (taxiway 8 was built in c.1960 between runways 1-19 and 6-24).

36 Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970; Aerial photograph of Floyd Bennett Field, May 24, 1956 and c.1967.

37 Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.

38 Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.

39 Gateway National Recreation Area, "Floyd Bennett Field List of Structures," October 2007.

40 "Phasing Out is Started at Floyd Bennett," Edward Hudson, "Navy Agrees to Open Floyd Bennett to Civilian Planes as Hearing Opens on F. A. A. Curbs," *New York Times*, 26 September 1968, 27.

41 Global Security.org, "Base Realignment and Closure," <http://www.globalsecurity.org/military/facility/brac.htm>.

42 "Phasing Out is Started at Floyd Bennett."

43 AeroWeb, *The History of Floyd Bennett Field and Coast Guard Air Station Brooklyn*, undated article, <http://www.aero-web.org/history/fbennett/cgframe.htm>.

44 Historic Floyd Bennett Field, "Historic Floyd Bennett Field During the Cold War," undated article, http://www.geocities.com/floyd_bennett_field/coldwar.html.

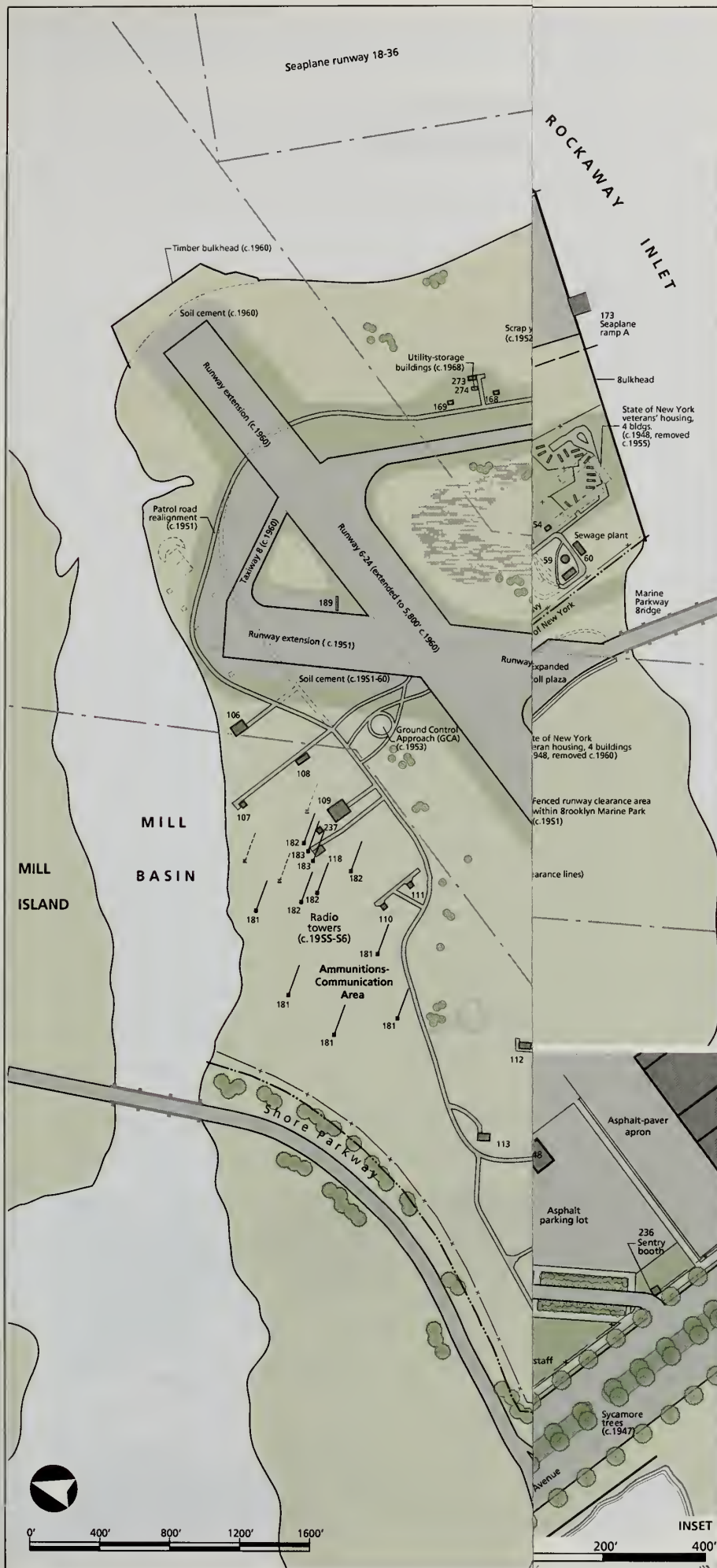
45 Blakemore and Linck, 73.

46 "USCG Air Station Brooklyn Property Map 1936-1988."

47 Limited information was found on small-scale features in the landscape during this period.

48 "USCG Air Station Brooklyn Property Map 1936-1988;" Naval Air Station New York, Brooklyn, N.Y. General Development Map," 16 February 1960 updated to c.1970.

Drawing 1.4



Cultural Landscape Report
for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

Cold War Period
1945-1972



National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

- SOURCES**
1. Aerial photographs, 1948, 1956, 1965
 2. USGS, Coney Island quadrangle, 1966
 3. U S Navy, plan of NAS New York, 1962, updated to 1970
 4. NPS, Structures Key Map, Floyd Bennett Field, 1983

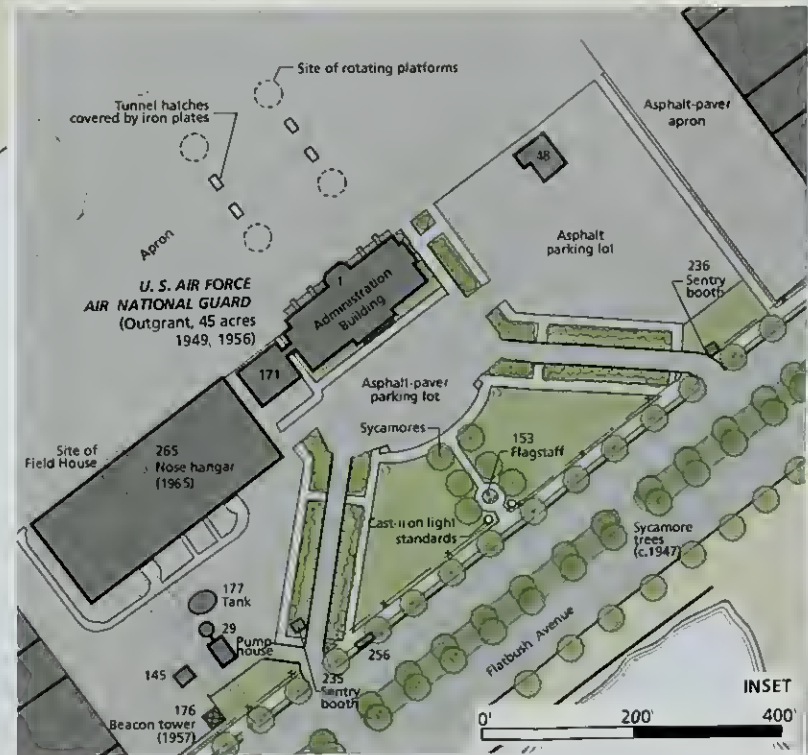
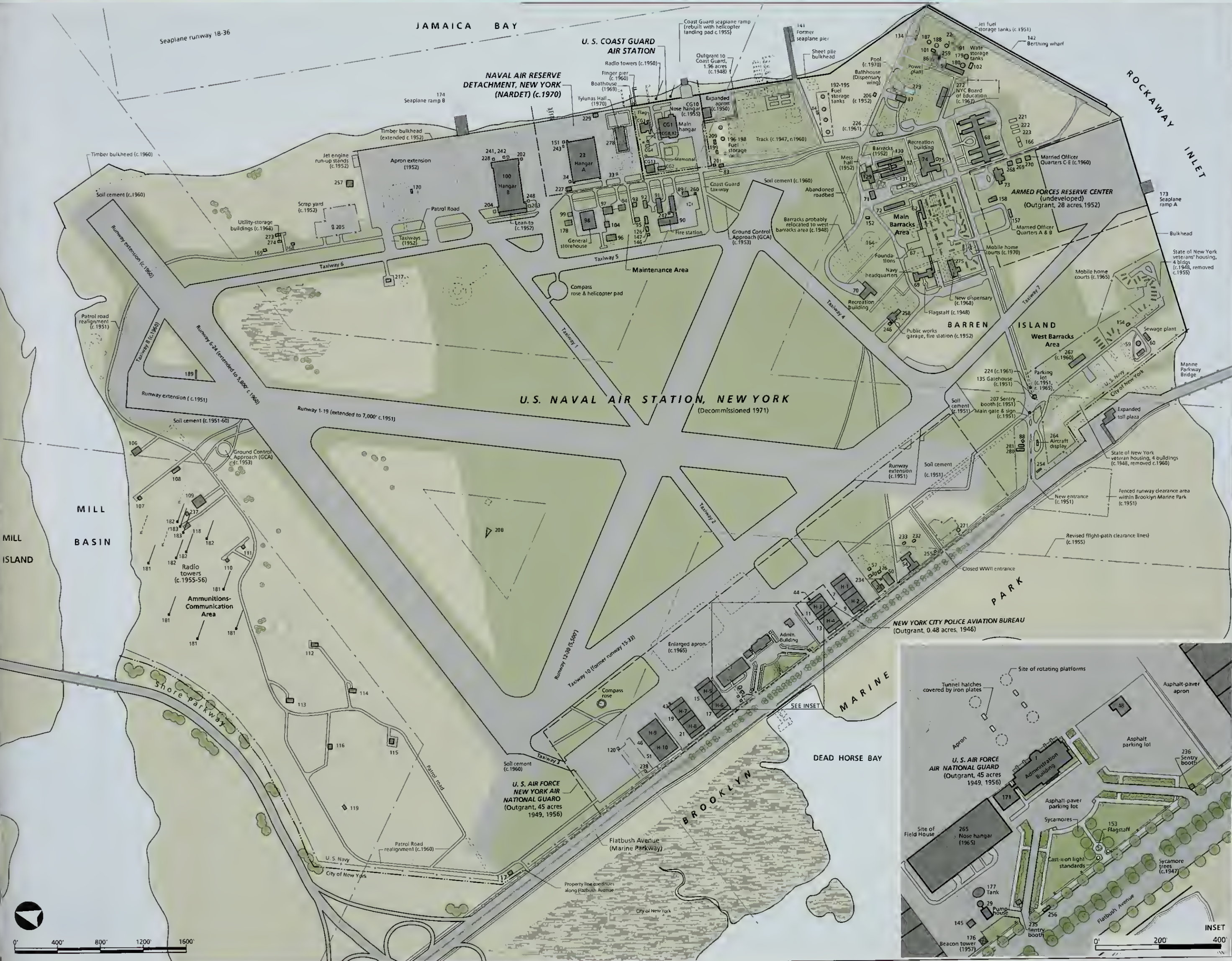
DRAWN BY
John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

LEGEND

- Property, lease/outgrant boundary
- Flight-path clearance line
- Building/structure, inventory number
- Paved, unpaved vehicular circulation
- Sidewalk
- Piles
- Fence, light
- Woods, specimen tree
- Managed turf/lawn
- Upland, low scrub
- Marsh
- Open water
- Site of feature removed since 1945
- (1952) Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1945 not dated.
3. Vegetation unknown except where indicated.
4. Plan shows conditions at end of period, c.1970-72.
5. Most building above 128 built after 1945; see Table 2 for building key.



Drawing 1.4

FLOYD BENNETT FIELD IN THE NATIONAL PARK SYSTEM, 1972-PRESENT

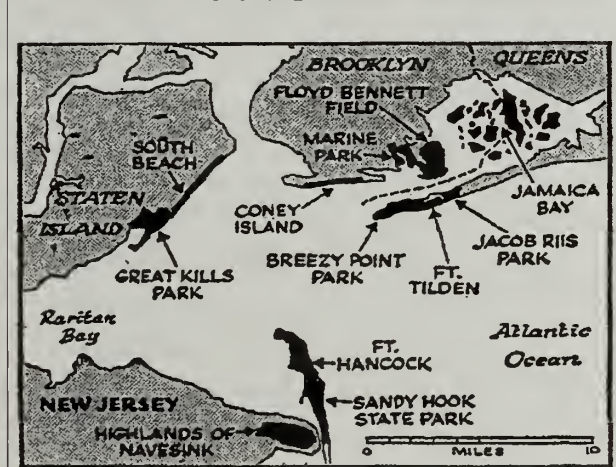
In 1972, most of Floyd Bennett Field, the former Naval Air Station (NAS) New York, was transferred from the administration of the Navy within the Department of Defense to the National Park Service within the Department of the Interior. While military uses would continue at three different parts of the field not included in the transfer, the dominant military aviation function of Floyd Bennett Field had ended. Over the next three decades, the landscape changed considerably as management shifted toward recreation and natural resource conservation and as limited budgets curtailed maintenance of the sprawling former military base.¹

TRANSFER OF FLOYD BENNETT FIELD TO CIVILIAN ADMINISTRATION

The transfer of Floyd Bennett Field to the National Park Service in 1972 had been preceded by several years of discussions on the best future use of the site. When the Navy decided to close NAS New York in the late 1960s, it did not have a plan for its future use. In response, various public and private entities advocated for different proposals. The city backed use of a portion of the field—the airfield and Hangar Row—as a general aviation airport for use by private craft. This followed earlier failed efforts by the city to reintroduce commercial traffic to reduce congestion at the city's two airports, LaGuardia and JFK. The state and city planning commissions backed a proposal to redevelop the entire site as a new community with an industrial park, shopping mall, recreation facilities, and housing for 180,000 people.² The proposal that had the most political support and momentum was one initially put forth by The Regional Plan Association in May 1969, calling on the Department of the Interior to establish a national seashore in lower New York Harbor, much as Fire Island to the east had been designated five years earlier. The plan proposed incorporation of several decommissioned

Figure 1.104: Map of initial proposal for New York Harbor National Seashore showing Floyd Bennett Field as one of the park's components. The title refers to a site visit by Secretary of the Interior Hickel. (Peter Kihss, "Recreation Area in Harbor Urged," *New York Times*, 12 May 1969.)

Harbor Recreation Area Urged; Hickel to Come Here Tomorrow



military reservations, including Floyd Bennett Field, Fort Tilden on Rockaway Beach, and Fort Hancock on Sandy Hook (fig. 1.104). The plan also recommended transferring several city parks to federal ownership, including the Jamaica Bay wildlife refuge, Brooklyn Marine Park, and Jacob Riis Park. Many supported this proposal given the city's financial hardship at the time.³

The Nixon administration backed the national seashore proposal and by early 1972, the National Park Service had developed more specific plans. Rather than using the national seashore designation as originally proposed, the park service developed a new designation, National Recreation Area, designed as a system of urban parks. With

various proposals for the future of Floyd Bennett Field still in circulation, the *New York Times* reported in May 1972: “The present prospects are that the Secretary of the Interior will easily prevail and that the National Park Service will get Floyd Bennett Field for inclusion in Gateway National Urban Recreation Area [sic].”⁴

On October 27, 1972, Congress passed Public Law 92-592 establishing Gateway National Recreation Area, the first large-scale urban park within the National Park System. The purpose of Gateway according to the legislation was “to preserve and protect for the use and enjoyment of present and future generations an area possessing outstanding natural and recreational features.”⁵ Gateway was one of two urban parks established in this legislation, the other being Golden Gate National Recreation Area, which incorporated similar types of resources as Gateway in the San Francisco Bay Area. Gateway encompassed over 26,000 acres of former city park and military lands in lower New York Harbor and adjoining areas on Long Island, Staten Island, and New Jersey, although not all as originally proposed by The Regional Plan Association (see fig. 1.104). Floyd Bennett Field was included within the 26,000 acres specified in the legislation to be transferred to the Department of the Interior. The legislation forbade the use of the site for general aviation or housing, thus putting an end to those proposals.⁶

Upon enactment of the Gateway legislation in October 1972, the Department of the Interior assumed jurisdiction over most of Floyd Bennett Field, placing it under administration of the National Park Service.⁷ The site was organized as part of the Jamaica Bay Unit of the park and served as the unit headquarters. As a unit of Gateway, Floyd Bennett Field also incorporated property not previously owned by the Navy as part of NAS New York, including the lands west of Flatbush Avenue and south of Shore Parkway formerly part of the city’s Brooklyn Marine Park, and a parcel of former city land to the northeast across Mill Basin along the Jamaica Bay waterfront.⁸

Within NAS New York, approximately 1,200 acres were transferred to the Department of the Interior. Excluded from the transfer were three parcels retained by the Departments of Defense and Transportation (fig. 1.105). The Navy retained approximately ten acres surrounding Hangar A and Tylunas Hall as the Naval Air Reserve Detachment, New York (NARDET NY). The Army took over approximately 100 acres at the south side of the field along Rockaway Inlet, an area that included the smaller parcel from its 1952 outgrant. The Coast Guard Air Station Brooklyn, which had been transferred to the federal Department of Transportation in 1967, retained its original ten-acre site along Jamaica Bay, but also finally acquired additional property it had been seeking since the end of World War II. This additional property included the former Navy recreation area and boat basin to the south, the south half of the maintenance area, and the east

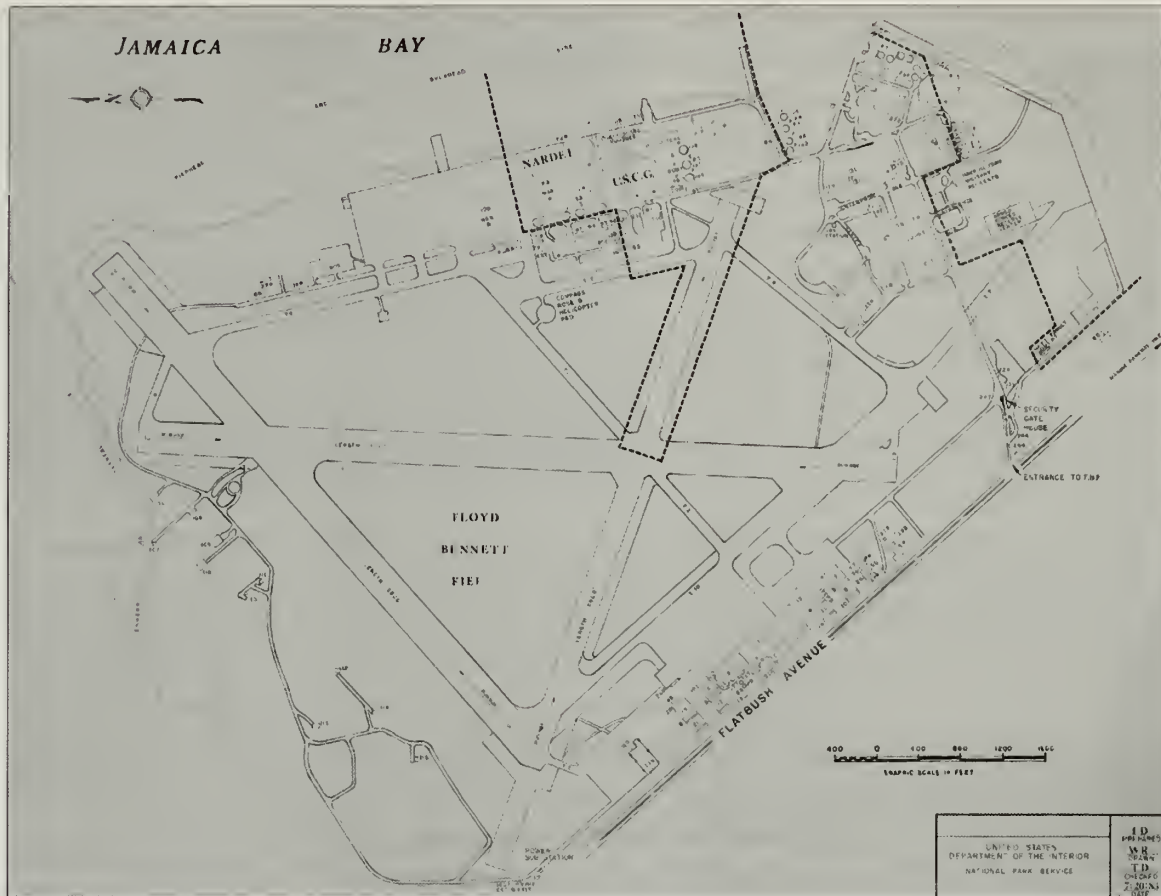


Figure 1.105: National Park Service plan of Floyd Bennett Field showing areas marked by dashed line that were not transferred to the National Park Service: NARDET and the expanded Coast Guard Air Station Brooklyn, and the Armed Forces Reserve Center (not labeled) at the south end of the field along Rockaway Inlet. (National Park Service, "Structures Key Map, Floyd Bennett Field," 20 July 1983, Gateway National Recreation Area Museum Collection.)

half of runway 12-30 which was intended as a helicopter landing area. The Coast Guard made some changes to its facility at this time, including fencing in its newly enlarged perimeter. In 1972, the frame barracks built in c.1943 were condemned and the residents moved to the Navy's Korean War-era barracks while a new building was being constructed. The new barracks, a large three-story concrete building with balconies completed in 1973, was built parallel to the bulkhead north of the main Coast Guard hangar.⁹

The 1972 Gateway legislation permitted the other federal agencies that retained portions of Floyd Bennett Field to continue using their property until such time as they decided to transfer administration to the Department of the Interior.¹⁰ The first to follow this provision was the Navy, which decommissioned NARDET NY and transferred the parcel to the Department of the Interior in c.1983. In later years, the National Park Service would lease this area to the New York City Department of Sanitation as a training facility.

South of NARDET, the Coast Guard Air Station remained active through the 1980s with its helicopter-based search and rescue operations. In May 1988, the Coast Guard held a fiftieth anniversary celebration attended by Mayor Ed Koch and the son of helicopter developer Igor Sikorsky, among other dignitaries, with aerial displays and a public open house. Several years after this celebration, the

Department of Transportation, the parent agency of the Coast Guard as well as the Federal Aviation Administration, began planning for the closing of Air Station Brooklyn. In 1997, the department transferred a 1.8-acre parcel in the area south of the original twelve acres to the Federal Aviation Administration for development of a Doppler radar facility for use by JFK International Airport. In May of the following year, the Air Station was decommissioned and its function transferred to the newly established Group-Air Station in Atlantic City, New Jersey. Upon decommissioning, the remainder of the Coast Guard property, including the original ten acres and the land to the south and on runway 12-30 acquired in 1972, was transferred to Department of the Interior jurisdiction as part of Floyd Bennett Field.¹¹ In 1998, the New York City Police Department relocated its Aviation Unit from Hangar Row to the former Coast Guard Air Station through a lease agreement with the National Park Service.

The Department of Defense property at the south side of Floyd Bennett Field along Rockaway Inlet remained under separate federal administration as an Armed Forces Reserve Center. In 1975, the Army completed construction of a large main building and several smaller buildings along the north side of the former seaplane parking apron. Access to the buildings was by a new drive that connected through the main barracks area. In 1997, the facility was redesignated a Marine Corps Reserve Center. The boundary between the NPS and the reserve center was laid out in 1972 to include the adjoining ranches houses (268-270) built as married officer quarters, the entire marginal wharf, and a portion of the west barracks area (see fig. 1.105). The actual management boundary, however, followed a chain-link fence around the reserve center that excluded the ranch houses, the east half of the marginal wharf, and the west barracks area.

MANAGEMENT OF FLOYD BENNETT FIELD, 1972-2008¹²

Upon acquisition of Floyd Bennett Field in late 1972, the National Park Service began to plan for the site's public opening two years later. One of the main management challenges—one that had also faced by the Navy since the end of World War II—was that the field had far more infrastructure than necessary. The park thus continued the Navy's lease agreements while also moving its own operations into various buildings. Leases that were continued included the New York City Police Department Aviation Unit, which remained at hangar 3 and expanded into hangar 4 prior to relocating to the Coast Guard property in 1998; and the city Board of Education, which retained its facility (272) in the main barracks area, although not as a public school. Within a few years, the park also established new leases and agreements with outside groups, including the federal Job Corps program and a community gardens organization.



Figure 1.106: View looking southeast at the reopened airport entrance to Floyd Bennett Field with park sign and obelisk, photographed in April 1979, five years after the public opening of the park. (Photograph 22536, Gateway National Recreation Area Museum Collection.)

Figure 1.107: Aerial view of Floyd Bennett Field looking northwest illustrating increased tree cover (dark areas) that had grown up, c.1980. The triangular pine plantation around the Ecology Village Campgrounds, planted in c.1974, is clearly visible at the south side of the airfield. (Photograph 18979, Gateway National Recreation Area Museum Collection.)



The park set up its own offices at the Navy headquarters building (69) in the main barracks area, and located maintenance facilities in the maintenance area adjoining NARDET and the Coast Guard Air Station. The park discontinued use of the mobile home courts, leaving the asphalt drives and pads. At Hangar Row, the original airport entrance was reopened, and a park sign and obelisk were installed along the northern drive to mark the entrance (fig. 1.106). The World War II addition to the Administration Building, where a visitor center was proposed, was demolished in

c.1976, and the overgrown plantings in the entrance area and the Navy sick bay (Building 48) to the south of the Administration Building were removed. Despite the leases and park uses, many of the buildings remained empty upon the opening of the park in 1974 and for many years thereafter.

In keeping with the Gateway legislation, changes to the landscape in the early years of the park focused on enhancing recreation and natural resources. Given its relatively recent origins both as a municipal airport and World War II-era naval base, there was little done to retain the barren aviation character of the landscape. Indeed, park management let nature take its course in many areas of the site, a decision related to limited maintenance funds as well as a desire for ecological restoration. Natural succession, in which managed field transitions to woods through lack of mowing, led to a change from open landscape to thickets and young woods across large areas of the site by 1980 (fig. 1.107). This was most noticeable in the northern part of the airfield and the former ammunition-communication area where there was rougher ground. Natural succession



Figure 1.108: Children camping in the airfield, c.1975. Note the open character of the landscape prior to natural succession that would convert a large part of the airfield to woods. (Photograph 22728, Gateway National Recreation Area Museum Collection.)

occurred more slowly on the original portion of the airfield, which the city had built with a layer of clay and topsoil. In addition to allowing natural woods to grow up, the park also planted thousands of Japanese black pines—a species favored in shorefront parks in the region—in the main and west barracks areas. The park also planted deciduous specimen trees including sycamore throughout the main barracks area.

Initial recreational improvements at Floyd Bennett Field included the development of youth campgrounds.

In the early years of the park, children camped in the open airfield (fig. 1.108). Within a few years of the park's opening in 1974, the park had installed tent platforms and picnic pavilions within two clusters of campgrounds: one at the northeast corner of the airfield west of taxiway 6 at the site of the World War II dirigible landing area, known as Camps Tamarack and Goldenrod; and a second at the south side of the airfield north of taxiway 4 adjoining the main barracks area known collectively as Ecology Village campgrounds. In c.1974, the park planted hundreds of pine trees along the triangular boundary of the Ecology Village campgrounds as a shelter and windbreak.¹³

Long-term plans for the development of Floyd Bennett Field were not finalized until 1979, when the General Management Plan for all of Gateway was approved. This plan was further refined in a Development Concept Plan and Environmental Assessment completed specifically for Floyd Bennett Field in September 1983.¹⁴ In preparation for the General Management Plan, the park undertook a number of studies including a historic structures report for Floyd Bennett Field and historic resource study of Jamaica Bay.¹⁵ The park also prepared a National Register nomination for the original municipal airport property, minus the portion of runway 12-30 belonging to the Coast Guard and the facilities along Jamaica Bay. The period of significance in the nomination began in 1931 with the dedication of the airport and ended in 1941 when the city transferred ownership to the Navy. The nomination was accepted and the district was listed in the National Register in 1981.

The General Management Plan and Development Concept Plan created three management zones for Floyd Bennett Field: Developed Area, Natural Area,

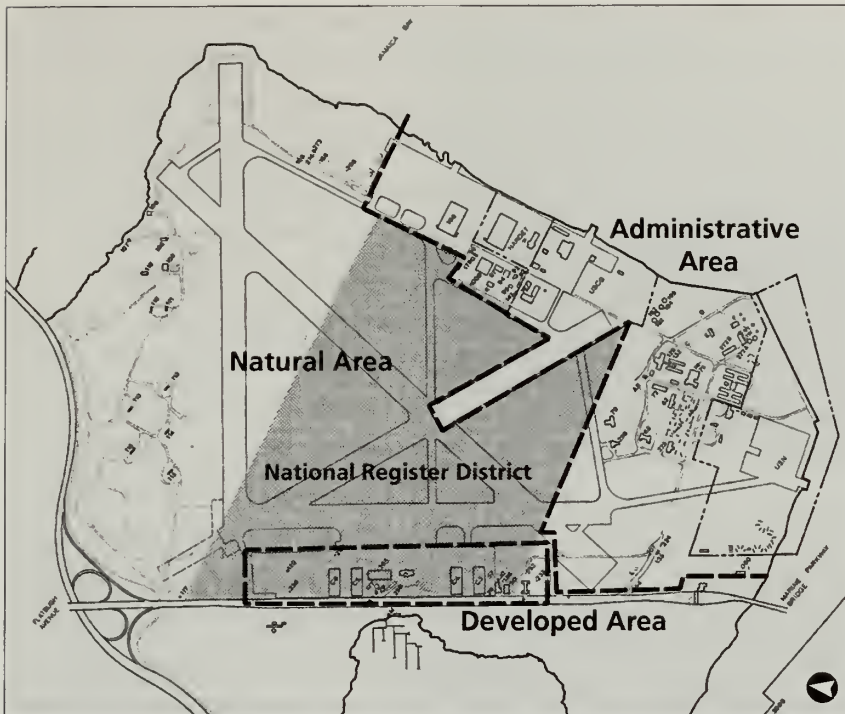


Figure 1.109: Plan of Floyd Bennett Field showing the National Register district (shaded area) and approximate boundaries of the three management zones prescribed in the General Management Plan and Development Concept Plan. ("Historic District" plan in M. Paul Friedberg et al., "Floyd Bennett Field, Gateway National Recreation Area," Unpublished Development Concept Plan prepared for the National Park Service, 27 October 1980, annotated by SUNY ESF.)

barracks area together with the separate Coast Guard and NARDET properties along Jamaica Bay anticipated for future inclusion into the national park site. Planned and existing uses in the Administrative Area included park headquarters, park police, park maintenance facilities, a tree nursery, and outside agencies and concessionaires, such as the Job Corps, city Board of Education, and research institutions.¹⁶

In the late 1970s, the park began to implement its long-term planning strategies, building on the initial improvements begun in c.1972. These planning efforts resulted in changes to the Floyd Bennett Field landscape distinguished by the three management areas defined in the General Management Plan and Development Concept Plan: Developed Area, Natural Area, and Administrative Area. These three areas loosely corresponded to the historic organization of the landscape into Hangar Row, the airfield and ammunitions-communication area, and the facilities along Jamaica Bay and south of the airfield including the main barracks area.

Hangar Row (Developed Area)

In Hangar Row, the park's efforts following approval of the General Management Plan were directed at adaptive reuse and returning the character of the municipal airport through demolition of buildings constructed after 1941. In c.1979, the park demolished a number of World War II-era buildings within Hangar Row including the wing of the Administration Building (171), adjoining the Navy sick bay (48), and the two wood-frame hangers 9 and 10 (46, 51) (fig. 1.110). The park

and Administrative Area, with the National Register district extending across the first two areas (fig. 1.109). The Developed Area, which called for preservation and adaptive reuse, encompassed Hangar Row. Plans called for the Administration Building to be designated as the William Fitts Ryan Visitor Center, intended to serve all of Gateway, with vehicular access moved from the original diagonal entrance drives to the main Navy entrance to the south. The Natural Area, which planners envisioned as an "urban wilderness," encompassed the airfield and the ammunitions-communication area to its north. The Administrative Area took in the main



Figure 1.110 (top): Looking southwest across the Hangar Row apron at the World War II-era hangars 9 and 10 being demolished, c.1979. (Photograph 22429, Gateway National Recreation Area Museum Collection.)

Figure 1.111 (bottom): A youth softball game on the Hangar Row apron, view looking south with the nose hangar and Administration Building in the background, c.1980. (Photograph 22440, Gateway National Recreation Area Museum Collection.)

did not demolish the remaining World War II-era frame barracks and training buildings (50, 54) off the south end of Hangar Row. Despite the initial improvements and operation of the visitor center in the Administration Building, Hangar Row remained largely vacant aside from the hangars 3 and 4 occupied by the New York City police. The area's huge interior spaces and exterior expanses of pavement were inhospitable to many uses, although good for occasional large events, such as carnivals, or informal use for a pick-up softball game (fig. 1.111)

After the initial demolitions, the park made few improvements to Hangar Row until the mid-1990s, coinciding with the anticipated transfer of the Coast Guard Air Station to the National Park

Service and relocation of the New York City police from Hangar Row. In c.1996, the park received federal highway funds to redevelop access and parking to Hangar Row and the Ryan Visitor Center in the Administration Building from the main park entrance on Flatbush Avenue. This project included the redesign of taxiway 10 (former runway 15-33) into a four-lane access road lined by guard rails, with earthen berms added at intersections with adjoining runways to control automobiles and for aesthetic enhancement (fig. 1.112).¹⁷ This drive provided access to two curbed and lighted parking lots built on the Hangar Row apron to the east of the Administration Building. These parking lots were built over the original concrete apron that served as the gate or passenger boarding area during the municipal airport era, and as a parade ground during World War II.

Following completion of the new entrance road and parking lots, the park began rehabilitating the Administration Building and the airport entrance area. The project, undertaken in the early 2000s, intended to return the character of the municipal airport period based on the findings of a historic structures report completed in 1981 and an update on the Administration Building published in

2000. Work on the Administration Building included new vinyl windows that followed the design of the original double-hung sash, and construction of an accessible ramp. As part of these improvements, the park demolished the c.1965 nose hangar (#265), replaced the south parking area with lawn, planted specimen trees and privet hedge along the diagonal drives, and installed Victorian-style light standards, drinking fountains, and benches in the central lawn area. The park removed the chain-link perimeter fence along Flatbush Avenue and added ornamental black metal picket fencing along the inside perimeter of the front lawn. A reproduction of the airport entrance sign was built on its original site. As a separate project, the park built a bike path in c.2004 along the east side of Flatbush Avenue as part of the Rockaway-Gateway Greenway. The two-lane asphalt bike path was built over an earlier sidewalk and veered on a new alignment as it crossed the diagonal entrance drives.

One of the biggest changes to Hangar Row during this period was carried out by a concessionaire. Following long-standing efforts to make use of empty facilities, the park entered into a twenty-year lease agreement in 2003 with Aviator Sports and Recreation, a private company, to redevelop the north half of Hangar Row into a recreation complex. The \$38,000,000 project, completed in 2006, redeveloped hangars 5-6 and 7-8 into a 170,000 square-foot indoor recreation facility through construction of an infill building that connected the two pairs of hangars (see fig. 1.112).¹⁸ A freestanding building housing the facility's chillers was built in the

Figure 1.112: Aerial photograph of Hangar Row and adjoining areas of the airfield in c.2007 indicating changes to buildings, circulation, and vegetation since c.1979. (USGS aerial photograph, reproduced from Microsoft Virtual Earth, annotated by SUNY ESF.)



airport entrance area along Flatbush Avenue. The project also included new parking lots and entrance drives on the Hangar Row apron, with a red scale-model airplane as a central focal point. Two large outdoor Astroturf fields with bleachers, scoreboards, stadium lights, and enclosing fence were located north of the hangars on the site of hangars 9 and 10 and the adjoining apron.

Airfield & North 40 Natural Area (Natural Area)

Within the airfield, changes in the years following approval of the General Management Plan in 1979 primarily involved the creation of managed natural grasslands in the areas between the runways. These grasslands covered approximately half of the airfield, with the remainder growing into dense woods or scrubby meadow. In keeping with its designation as the site's Natural Area, the park vegetated portions of runways 1-19 and 12-30 to make them fit in with the surrounding grasslands despite the inclusion within the historic district (see fig. 1.112).¹⁹ Some of the runways were also closed off with concrete barriers or earthen berms as part of the federal highway-funded circulation improvements completed in c.1996. Vehicular circulation through the airfield was restricted to taxiway 10, which had been redesigned as a four-lane entrance road, runway 6-24, and taxiways 1, 2, 5, and 6. The fenced-in east half of runway 12-30 that had been transferred to the Coast Guard in 1972 was used as a vehicle storage area by the New York City police following their move to the former Coast Guard station in 1998. The north end of runway 1-19, corresponding with the portion extended during the Korean War, was used as a model airplane flying field. At the opposite end of the airfield, community gardens managed by the Floyd Bennett Garden Association were established in the former airfield turf between Hangar Row and taxiway 10.

Figure 1.113: A recent (2006) photograph of successional woods in the North Forty Natural Area, in an area formerly part of the airfield and flight-path clear-zone for runway 6-24, 2005. This is the trailhead off runway 6-24. (SUNY ESF.)



The former ammunitions-communication area to the north of the airfield, which also fell within the site's Natural Area management zone, became densely wooded (fig. 1.13). The park designated this part of the site the North 40 Natural Area, designed for passive recreation and natural resource conservation, including

establishment of native plant communities that would support habitat for a range of wildlife.²⁰ The park removed the Navy's radio transmission towers and several buildings, but left the concrete ammunitions bunkers, which became enveloped by vegetation. The asphalt surface of the patrol road was either removed or covered for use as a walking path, and several new trail spurs were laid out to a trailhead along runway 6-24. Within the flight-path clearzone on the approach to runway 12-30 at the west end of the area, the park built a pond in c.1980 to provide a wildlife viewing area.

Jamaica Bay Facilities & South Administrative Area (Administrative Area)

The area along the Jamaica Bay waterfront was managed in the years following approval of the General Management Plan in 1979 by three separate federal departments: Interior, Defense, and Transportation. The National Park Service retained the north ends of the former Aviation Patrol Base and the maintenance area. The park removed several small buildings including ammunition storage buildings and small outbuildings around the perimeter of Hangar B (fig. 1.114). This large World War II-era hangar stood vacant for many years except for park offices in the lean-to until the Historic Aircraft Restoration Project (H.A.R.P.) moved there in c.1995. A Volunteer in the Parks program, H.A.R.P. used Hangar B for its aircraft restoration work, housing many vintage airplanes within the enormous space.²¹

Figure 1.14: Aerial photograph of the Jamaica Bay facilities and adjoining areas of the airfield in c.2007 indicating changes to buildings, circulation, and vegetation since c.1979. (USGS aerial photograph, reproduced from Microsoft Virtual Earth, annotated by SUNY ESF.)



The Navy maintained jurisdiction over the south half of the Aviation Patrol Base hangar, including Hangar A built in 1940, as part of NARDET NY until the base was decommissioned in c.1983. Following its transfer to the National Park Service, the base remained vacant until the 1990s, when the park granted the New York City Department of Sanitation exclusive use of the area as a training facility for garbage truck driving. The department made Tylunas Hall, constructed

by the Navy in 1970, its headquarters, but had no use for the hangar, which was demolished in c.1998, leaving only the concrete floor and tracks for the doors (see fig. 1.114). To the west side of Tylunas Hall, the department added a parking lot with planted medians.

At the neighboring Air Station Brooklyn, the Coast Guard made few changes to the facility following construction of its new barracks (Edwards Hall) in 1972, aside from construction of a swimming pool at the site of the old barracks in 1979. South of the original Coast Guard property, the Federal Aviation Administration's construction of a large Doppler radar tower on its small parcel transferred from the Coast Guard in 1997 added a prominent feature to the landscape (fig. 1.115). The facility, which serviced JFK International Airport across Jamaica Bay, included a



Figure 1.115 (above): View looking north along the Jamaica Bay shoreline showing Doppler radar tower added in 1997 with former Coast Guard main hangar in background, December 2006. The three-story building to the right of the hangar is the former Coast Guard barracks built in 1973. The piles are remnants from the airport seaplane pier. (SUNY ESF.)

distinctive white geodesic dome on a steel tower, a fenced perimeter, small support building, and two access roads. A number of changes were made to the air station following its decommissioning in May 1998 and subsequent relocation there of the New York City Police Department Aviation Unit. The police retained the secure perimeter that included the southeast half of runway 12-30 and part of the maintenance-storage area, adding concrete barriers along many of the roads and a

guard booth at the entrance along the main access road (fig. 1.116). The police removed the nose hangar built in c.1955 and the adjoining World War II-era aviation fuel tanks, and in 2004 built an equipment storage building north of the hangar. At the Coast Guard's section of the Navy maintenance area, the police added a large temporary storage building and a memorial garden near buildings 90 and 91.



Figure 1.116: Aerial photograph of the former main and west barracks areas in c.2007 indicating changes to buildings, circulation, and vegetation since c.1979. (USGS aerial photograph, reproduced from Microsoft Virtual Earth, annotated by SUNY ESF.)

In the former main barracks area and west barracks area south of the airfield, there were numerous changes in the years following completion of the General Management Plan. The Army continued to operate the reserve center along the south edge of the area along Rockaway Inlet, but made few changes to the site after completing its main building in 1975. While some changes on National Park Service-managed land reflected development for new programs for the park or park partners, most changes stemmed from deterioration of vacant buildings and natural succession from mown turf to woods across a large percentage of the area (see fig. 1.116).

The park used the former west recreation building (#70) for its Ecology Village program, barracks #5 (69) for its park headquarters, and the former new dispensary (272) as the park police headquarters. The park removed the swimming pool on the site of the old dispensary (87) and redeveloped the site as a park nursery. Across the road to the east, the park removed the four World War II-era AVGAS fuel storage tanks (192-195) and developed the site as an archery range. The Rockaway Inlet frontage in the west barracks area was set aside as a restricted fishing area. Buildings that the park abandoned included two barracks (62, 72), the large Bachelor Officers' Quarters (68), Married Officers' Mess Hall (73), the sewage plant (59-60), laundry (85), Power Plant A (86), and several ancillary buildings from the World War II era. The Bachelor Officers Quarters and Married Officers' Club were demolished between 1983 and 1987, and their sites redeveloped as ballfields. By the late 1990s, the park also abandoned the Korean War-era barracks complex (129-132) and the former Enlisted Men's Recreation Building (74) following loss of their long-time tenant, the Job Corps program.

Other changes to the landscape within the south administrative area included addition of berms along Floyd Bennett Boulevard to close off the intersection with taxiway 10 leading to the seaplane base along Rockaway Inlet. This was added as part of the construction of the new entrance road to Hangar Row along taxiway 10 in c.1996 (see fig. 1.116). Around the same time, the park built a new parking lot near the entrance gate in the former west barracks area, and a model race track on the southern part of taxiway 7. The condition of many of the vacant buildings and abandoned structures continued to deteriorate after these circulation improvements. By the early 2000s, the marginal wharf, Power Plant A (86), laundry (85), and two barracks (62, 72), all dating from the World War II era, were overgrown with vegetation and in varying states of ruin with collapsed roofs, missing windows, and overgrown vegetation (fig. 1.117). The death of many of the Japanese black pine planted in the south administrative area by the late 1990s added to the feeling of decline in the landscape.



Figure 1.117: Looking east through remains of main mess hall with abandoned barracks (62, 72) to left and right, and empty Korean War-era barracks complex (129-132) in the distance, 2006. (SUNY ESF.)

As of 2008, the National Park Service was developing a new General Management Plan for all of Gateway National Recreation Area to address the future of Floyd Bennett Field over the course of the next two decades or more. The new plan would continue to address issues similar to those found in the 1980 plan, particularly the balance of recreation and natural resource conservation and how to best use the park's extensive infrastructure. It is likely that the plan could also address the landscape as a historic resource, in keeping with a broadened understanding of historic preservation that has developed since completion of the original General

Management Plan. With park interpretation recently focusing on the site's role in World War II in addition to its origins as New York City's first municipal airport, the plan may also recognize the historic role that Floyd Bennett Field played in the World War II home front as Naval Air Station, New York.

LANDSCAPE CHARACTERISTICS, 2008 (DRAWING 1.5)

After more than three decades of National Park Service management, the landscape of Floyd Bennett Field changed considerably since its decommissioning by the Navy in 1971. While there was some new construction, the most significant changes to the landscape have come through building demolition and deterioration, changes in circulation, and most notably through natural succession that has led to a loss of much of the defining open character of the field. Despite these changes, the key organization of the landscape and many of its most prominent buildings, structures, and circulation features from its development as a municipal airport, Naval Air Station, and Coast Guard Air Station remain intact.

Natural Systems and Features

During the National Park Service period, natural systems became reestablished on large areas of formerly managed landscape, particularly within the North 40 Natural Area and the airfield that were designated as Natural Area management zones. Here, successional vegetation, ranging from scrub thickets to mixed hardwoods forest upwards of thirty feet in height, covered much of the landscape. Most of these woods occurred on the northern expansion of the field created by the Navy during World War II. The original portion of the airfield built by the city was transformed from mown turf to naturalized grasslands mown annually to keep down woody vegetation. These grasslands, which reach upwards of five feet in height during the growing season, are managed to enhance wildlife habitat. The park has expanded the grasslands area by laying down soil and mulch over

portions of the runways to allow vegetation to grow. The southern end of the field, surrounding the mixed pine plantation at Ecology Village, is not managed as grasslands and the park has instead allowed this area to transition to tree and shrub cover. Other areas covered by successional woody vegetation have developed across a large percentage of the area south of the airfield and at the south end of Hangar Row.

Along Mill Basin, Jamaica Bay, and Rockaway Inlet, the area of natural shoreline has slowly increased during the National Park Service period. As timber and steel bulkheads have collapsed, additional areas of sand beach and tidal estuary have become reestablished.

Spatial Organization

During the National Park Service period, the spatial character of the landscape changed dramatically due primarily to natural succession from open fields to woods. The airfield became enclosed along the north and south sides by woods and a mixed pine plantation, while additional areas of successional woods along the eastern side have also enclosed the space. Within the airfield, corresponding to the perimeter runways and taxiways, successional woods and the pine plantation have also reduced the extent of the airfield space by nearly one half. The cyclone fence added by the Coast Guard in c.1972 to enclose the southeast half of runway 12-30 also disrupted the open spatial character of the airfield, as did a number berms, concrete barriers, and guiderails added in c.1996 to close off runways and taxiways (see fig. 1.112).

Within other areas of the field, changes in spatial organization resulted primarily from building demolition and change from open field to woods. Within Hangar Row, the spatial character was altered during this period through the park's demolition of hangars 9 and 10, the Administration Building wing, Navy sick bay, and the nose hangar. Additional changes occurred from Aviator Sports' infill building between Hangars 5-6 and 7-8, by the chiller building constructed in the entrance area, and by the two fenced playing fields and sets of bleachers at the north end of Hangar Row (see fig. 1.112). Along Jamaica Bay, changes in the spatial character resulted from addition of fences around the NARDET facility, construction of the large Coast Guard barracks building, demolition of Hangar A, and removal of the c.1958 Coast Guard hangar and AVGAS tanks. In the south administrative area corresponding with the former main and west barracks areas, the open, barren feeling of the landscape was altered primarily through the growth of woods and planting of trees along the roads and buildings, but also through demolition of the Bachelor Officers' Quarters and Officers' Club and several smaller buildings and structures (see fig. 1.116). The adjoining Reserve Center established a new space in the landscape with its development in 1975

along Rockaway Inlet at the former seaplane base. This development included the addition of a perimeter fence, new entrance drive, and construction of three large buildings.

Land Use

During the National Park Service period, the use of Floyd Bennett Field changed from primarily military-aviation to recreation-conservation, although it continued to host a variety of ancillary uses. The entire NAS New York property remained in federal ownership, but was managed by three separate departments. By the end of the period, the National Park Service administered all of the property except for the two-acre site at the former Coast Guard Air Station Brooklyn belonging to the Federal Aviation Administration where it maintained a Doppler radar tower, and an approximately 100-acre parcel along Rockaway Inlet administered as a Marine Corps Reserve Center.

Military-aviation uses continued for a number of years after 1972 at NARDET, Coast Guard Air Station Brooklyn, the Reserve Center, and hangars 3 and 4 leased to the New York City Police Department Aviation Unit. At the end of the period, the police department's helicopter service remained the only active aviation use at the field, located at the former Coast Guard property. H.A.R.P. continued aviation-related uses at its aircraft restoration program in Hangar B. The Reserve Center remained the only active military use at its separately administered federal property along Rockaway Inlet. The New York City Department of Sanitation introduced sanitation training as a new use at the former NARDET facility, although it could claim a link back to Barren Island's early use as a city garbage dump.

Recreational uses directly administered or overseen by the National Park Service at Floyd Bennett Field included hiking and nature viewing at the North 40 Natural Area; campgrounds and environmental programs at Ecology Village; an archery range and nursery in the south administrative area; and a visitor center at the Administration Building. Park partners or concessionaires that provide recreational opportunities included Aviator Sports and the Floyd Bennett Field Garden Association at Hangar Row; a model plane club at the north end of runway 1-19 and H.A.R.P. in Hangar B; and in the south administrative area, playing fields maintained by Polytechnic University and the Gateway Environmental Study Center operated in partnership with the New York City Board of Education.

Cluster Arrangement

During the National Park Service period, Hangar Row and the Jamaica Bay facilities (including the former Aviation Patrol Base/NARDET, maintenance area, and the Coast Guard Air Station Brooklyn) remained as well-defined clusters of development in the landscape. The main barracks area lost much of its identity as a cluster due to building demolition, development of the Armed Forces Reserve Center, and growth of woods that blurred the flight-path boundaries that originally defined the cluster. The west barracks had lost its identity as a cluster prior to 1972.

Topography

The topography of Floyd Bennett Field remained largely unchanged during the National Park Service period except for minor alterations due to shoreline erosion from bulkhead deterioration, and addition of berms across runways, taxiways, and roads.

Vegetation

Planted and managed vegetation at Floyd Bennett Field changed dramatically during the National Park Service period, adding to the change created through natural succession from field to woods. Changes in vegetation included the transition of the mown airfield turf to natural grasslands; establishment of a large mixed-pine plantation in the airfield to shelter campgrounds; planting of specimen trees in the south administrative area; and removal of the ornamental plantings in the airport entrance area (see fig. 1.106). The hedges lining the diagonal drives were replaced in part in c.2000, and specimen trees were added at the same time. At the Coast Guard Air Station, foundation plantings remain around the main hangar, although no documentation was found to indicate whether these were altered after 1972. A memorial garden with trees and shrubs was added by the police in c.2001 at the south end of the maintenance area.

Circulation

During the National Park Service period, there were relatively few changes to the physical structure of the circulation at Floyd Bennett Field, but the outward appearance and use changed considerably. The changes resulted from closing off runways and taxiways with berms, concrete barriers, and cyclone fencing; partial covering of runways with soil and mulch to allow vegetation to grow; and overgrowth from successional woody vegetation (see figs. 1.112, 1.116). None of the runways was actively used for aviation, although runway 6-24 was kept open to allow planes to land on special occasions.

Notable physical changes to circulation features during the early years of the park included the addition of a second parking lot next to the park headquarters building (69), a new entrance drive (Cei Angelo Nania Way) to the Reserve Center off Floyd Bennett Boulevard, addition of walking trails in the North 40 Natural Area, and removal of the parking area south of the Administration Building. Later changes included the introduction in c.1996 of a new four-lane public entrance road over taxiway 7-10 that led to parking lots constructed over the Hangar Row apron. These parking lots, paved in asphalt and bordered by concrete curbs and sidewalks, altered the open circulation pattern of the apron, where planes formerly parked and passengers boarded (see fig. 1.112). A new parking lot was built near the main gate, and the adjoining Aviation Road was realigned. With development of the Aviator Sports complex in c.2006, the public entrance road was extended and additional parking lots were constructed on the Hangar Row apron. Other physical changes to circulation during this period included the addition of a bikeway parallel to Flatbush Avenue, construction of a remote-controlled car track on taxiway 7, and collapse of the roadway along the marginal wharf due to erosion and failure of the bulkhead.

Buildings and Structures

Since 1972, many changes have been made with regard to the buildings and structures of Floyd Bennett Field (see Table 1.3 for a list of buildings and structures). Over the course of the period, major changes to buildings and structures in Hangar Row included demolition of the Administrative wing (171), Navy sick bay (48), nose hangar (265), and hangars 9 and 10 (46, 51). New construction included the Aviator Sports infill and chiller buildings, and a park comfort station. In the North 40 Natural Area, the radio towers were removed along with several of the buildings (107, 108, 118), while the ammunitions magazines (110-115) became covered in vegetation. The park built three small, wooden photography shelters around a pond near Flatbush Avenue. Within the airfield, the park added many minor buildings and structures, including an announcer's booth in the model airplane flying field at the north end of runway 1-19, a park comfort station along taxiway 6, and tent platforms and pavilions within the two sets of campgrounds.

The administrative areas of the park underwent extensive changes to buildings and structures during this period. Within the former Aviation Patrol Base/NARDET, building demolitions included Hangar A (23) in c.1998 and several ammunitions storage buildings in the years prior. Within the Coast Guard property that was transferred to the National Park Service in 1998, changes included demolition of the World War II-era Coast Guard barracks and the Coast Guard nose hangar. New buildings and structures included Coast Guard barracks known as Edwards Hall (later police offices), a temporary storage building, an

equipment shed, and a temporary training tower. The parcel transferred to the Federal Aviation Administration was developed with a Doppler radar tower and two small support buildings. Within the south administrative area, major building demolitions included the Bachelor Officers' Quarters (68), Officers' Club (73), and fuel storage tanks along the marginal wharf. A number of buildings fell into ruin or remained empty and deteriorating, including Power Plant B (85), the laundry (86), two World War II barracks (62,72), the Korean War-era brick barracks complex (129-132), and two single-family houses originally used as Married Officer Quarters (157, 158). The foundations of the main mess hall, which burned in 1969, were not removed. New major buildings within the south administrative area were limited to the three erected at the Reserve Center in 1975 on property belonging to the Department of Defense. Minor buildings included two park comfort stations, a greenhouse at the nursery, and pavilions at the archery range and Ecology Village.

Views and Vistas

The major views and vistas in the Floyd Bennett Field landscape changed in extent during the National Park Service period primarily through the growth of woods. From the ground, sight lines along the runways were interrupted by berms, fences, and successional woods that encroached on the former runway clear zones. Panoramic views across the airfield, including views from the control tower in the Administration Building (1) became restricted by successional woods and the Ecology Village pine plantation. Within the south administrative area, views south and east across the open waters of Jamaica Bay and Rockaway Inlet were lost due to growth of successional woods and planted trees.

Constructed Water Features

During the National Park Service period, the Navy swimming pool built in c.1970 at the site of the dispensary (68) was removed probably to allow for development of the site as the park nursery in c.1980. Around the same time, the park built a pond off the northwestern approach to runway 12-30 in the North 40 Natural Area. This pond was intended as a wildlife viewing area. The Coast Guard added a swimming pool in c.1979 on the site of its World War II barracks.

Small-Scale Features

Small-scale features in the landscape changed considerably during the National Park Service period. The loss of aircraft, although not permanent features, was one of the most conspicuous overall changes. Along with the planes disappeared navigation devices such as runway lights and windsocks. Also removed was the perimeter chain-link fence along Flatbush Avenue, which the park replaced along

Hangar Row with a black chain-link fence and along the entrance area with an ornamental metal picket fence. At the airport entrance, the park also installed a replica of the airport sign, and Victorian-style light standards, drinking fountains, and benches. Other notable changes elsewhere in the landscape included the Coast Guard's addition of chain-link fencing around the south half of runway 12-30, street lights along the roads and parking lots, addition of site-wide park furnishings—such as picnic tables, benches, and garbage cans—and replacement of Navy signs with National Park Service signs for visitor wayfinding. Numerous small-scale features, such as fences, signs, benches, and bollards, have been added by park partners and concessionaires at Aviator Sports, the community gardens, model flying field, and remote-control car track.

TABLE 1.3

FLOYD BENNETT FIELD NATIONAL PARK SERVICE-PERIOD BUILDING/STRUCTURE KEY (2008)

Sources: "Structures Key Map, Floyd Bennett Field," 3 April 1992 partially updated to 2006; 2007 GATE List of Structures; Barbara Judy, "USCG Air Station Brooklyn Property Map 1936-1988." Buildings in italics pre-date 1972. Names in parentheses indicate previous names/uses; undated demolitions occurred 1972-2008.

FLOYD BENNETT FIELD, GATEWAY NATIONAL RECREATION AREA

1	Ryan Visitor Center (Administration Building)	60	Vacant (former Sewage Treatment Plant)
2	Demolished pre-1972 (former Field House)	61 63-65	Demolished pre-1972 (Barracks Nos. 1, 2-4, 6)
3 - 6	Hangar Row Hangars 1-8 (with lean-to, infill bldgs.)"	66	Vacant (Former CPO Club, Barracks No. 2)
23	Demolished (Hangar A)	60	Demolished pre-1947
24	Demolished pre-1972 (APB Squadron Barracks 14)	67	Ruins (Foundations of Mess Hall)
25	Demolished pre-1941	68	Demolished (BOQ & Enlisted Men's Barracks)
26	Dope Shop & Sheet Metal Shop	69	Park Administration (former CPO Barracks No. 5)
27	Demolished pre-1972 (WAVES Barracks No. 12)	70	Ecology Village Gym (West Recreation Building)
28	Demolished pre-1972 (CPO Recreation Building)	71	Demolished (Hobby Shop/Marines Garage)
29	Fire Pump House & Water Tank	72	Vacant (former Barracks 15)
30	Sewage Ejector Pump House	73	Demolished (Officers' Club/Mess Building)
31	Demolished pre-1947	74	Former Job Corps Gym (Navy Exchange/Rec. Building)
32, 33	Demolished (Gasoline Pump Houses, Waste Oil Strg.)	75	Sewage Pumping Station 'A'
34	Demolished (Storage Building)	76	Demolished pre-1972 (Barracks No. 10)
35	Demolished pre-1972 (Boat House)	77	Demolished pre-1972 (Barracks No. 8)
36	Demolished (Salvage Building)	78	Demolished pre-1972 (Barracks No. 9)
37	Demolished (Equipment Shed)	79	Demolished pre-1972 (Barracks No. 7)
38	Demolished pre-1972 (Squadron BOQ)	80	Demolished pre-1972 (Barracks No. 13)
39	Demolished (Ground Support Shop)	81	Demolished pre-1972 (Barracks No. 11)
41	Demolished (Ammunitions Storage)	82	Vacant (former Heater House)
42- 45	Ammunitions Lockers (Demolished except 44)	83-84	Demolished (Gasoline Storage Tanks Pump Stations)
46	Demolished (Hangar 9)	85	Vacant (former Laundry)
47	Paint Store House (ruin)	86	Vacant (former Power Plant 'A')
48	Demolished (Sick Bay)	87	Demolished (Bath House, Dispensary Remnant Wing)
49	Demolished pre-1972 (Boat Repair Shop)	88	South Service Substation
50	Fire House	89	NYPD Sewage Pumping Station 'B'
51	Demolished (Hangar 10)	90	NYPD Building (former Fire Station)
52	Demolished pre-1972 (WAVES Laundry)	91	NYPD Building (former Station Maintenance)
53	Demolished pre-1972 (Celestial Navigation Training)	92	Demolished (PW/Paint & Oil Storehouse)
54	Barracks (Synthetic Training Building)	93	Demolished (PW Office/Bombsight Storage)
55	Redesignated 255	94	Vacant (former Torpedo Storage)
56	Demolished pre-1972 (Public Works & Police Station)	95	Demolished (USCG Air Crew Facility/Ordinance Shop)
57	Transformer Vault	96	Vacant (Seabee Reserve Training, Power Plant 'B')
58	Demolished pre-1972 (Garage, Aviation Free Gunnery)	97	Storage (former Cold Storage & Commissary)
59	Demolished (Incinerator)	98	Maintenance Warehouse (former General Storehouse)

99	Pumping Station—Fire Protection	146	Demolished (PW Storage Building)
100	Hangar 'B' H.A.R.P. (former Seaplane Hangar)	147	Demolished (PW Storage Building)
101	Vacant (Fuel Oil Storage Substation No. 2)	148	Demolished pre-1972 (Shop Building)
102	Fire Booster Station (Water Storage Pump House)	149	Demolished or unassigned number pre-1972
103	Abandoned (Site of Lighter-Than-Air Facilities)	150	Demolished or unassigned number pre-1972
104	Demolished (Storage Building, Misc.)	151	Demolished (Hangar A Line Operators Building)
105	Demolished pre-1972 (Shotgun Range House)	152	Gasoline Filling Station
106	Storage (former Inert Storage)	153	Airport Entrance Flagpole
107	Demolished (Smoke Drum Storage)	154	Pump house
108	Demolished (S. A. Pyrotechnics Storage)	155	Demolished or unassigned number pre-1972
109	Storage (former Ordinance/Practice Bomb Storage)	156	Demolished or unassigned number pre-1972
110, 111	Vacant (Fuse & Detonator Magazines)	157	Demolished or unassigned number pre-1972
112-115	Vacant (High Explosive Magazines)	158	Vacant (former Married Officer Quarters A)
116	Vacant (Ammunition Magazine, former Warhead)	159	Vacant (former Married Officer Quarters B)
117	North Service Substation	160	Demolished or unassigned number pre-1972
118	Demolished (Radio Transmitter Building)	161	Demolished or unassigned number pre-1972
119	Demolished pre-1972 (Direction Finder Station)	162	Demolished or unassigned number pre-1972
120	Transformer Vault	163	Demolished or unassigned number pre-1972
121	Demolished pre-1972 (Unknown)	164	Baseball Field
122	Demolished pre-1972 (PW Storehouse 'A,' Hospital C.B.)	165	Demolished or unassigned number pre-1972
123	Demolished (PW Storehouse 'B')	166	Reassigned to Reserve Center (BOQ Handball Courts)
124	Demolished pre-1972 (Gas Dist. & Operation Office)	167	Demolished or unassigned number pre-1972
125	Demolished pre-1972 (Furniture Maintenance Building)	168	Vacant (former Ready Ammunitions Magazine)
126	Vacant (former Paint Storage Building)	169	Vacant (former Ready Ammunitions Magazine)
127	Demolished pre-1972 (Electrical Gear Shed)	170	Demolished (Aircraft Line Operator Building)
128	Demolished pre-1972 (Salvage Shed)	171	Demolished (Administration Building Wing)
129	Vacant (Brick Mess Hall)	172	Demolished pre-1972 (unknown)
130	Vacant (Brick Barracks #1)	173	Reassigned to Reserve Center (Seaplane Ramp A)
131	Vacant (Brick Barracks #2)	174	Seaplane Ramp B
132	Vacant (Brick Barracks Breezeway)	175	Demolished or unassigned number pre-1972
133	Demolished or unassigned number	176	Beacon Tower (1957)
134	Demolished (Jet Fuel Loading Stand)	177	Fire Pump House Second Water Tank (c.1947-60)
135	Visitor Contact Station (Main entrance gate house)	178	Pumping Station Water Storage Tank
136	Demolished or unassigned number pre-1972	179	Water Storage Tank
137	Demolished or unassigned number pre-1972	180	Water Storage Tank
138	Demolished or unassigned number pre-1972	181	Demolished (Sleeve Antennae, 5)
139	Demolished or unassigned number pre-1972	182	Demolished (Low Frequency Antennae, 4)
140	Demolished or unassigned number pre-1972	183	Demolished (UFH/VFH Antennae, 2)
141	Piles (City Pier remnants)	184	Demolished or unassigned number pre-1972
142	Berthing/Marginal Wharf; part in Reserve Center	185	Demolished or unassigned number pre-1972
143	Building 69 Flagstaff	186	Demolished or unassigned number pre-1972
144	Demolished or unassigned number pre-1972	187	Demolished (Fuel Oil Storage Tank)
145	Demolished (Gasoline Pump Station)	188	Demolished (Fuel Oil Storage Tank)

189	<i>Demolished (Optical Landing System)</i>	232	<i>Demolished pre-1972 (storage building)</i>
190	<i>Demolished (Jet Fuel Storage Tank)</i>	233	<i>Demolished (Paint Locker)</i>
191	<i>Demolished (Jet Fuel Storage Tank)</i>	234	<i>Vacant (former Dope Shop Storage)</i>
192	<i>Demolished (AVGAS Storage Tank)</i>	235	<i>Demolished (ANG Sentry Booth)</i>
193	<i>Demolished (AVGAS Storage Tank)</i>	236	<i>Demolished (ANG Sentry Booth)</i>
194	<i>Demolished (AVGAS Storage Tank)</i>	237	<i>Demolished (Radio Transmission Area Shed)</i>
195	<i>Demolished (AVGAS Storage Tank)</i>	238	<i>Demolished (Storage Building)</i>
196	<i>Demolished (AVGAS Storage Tank)</i>	239	<i>Demolished or unassigned number pre-1972</i>
197	<i>Demolished (AVGAS Storage Tank)</i>	240	<i>Demolished or unassigned number pre-1972</i>
198	<i>Demolished (AVGAS Storage Tank)</i>	241	<i>Removed (Hangar B Portable Line Storage Shed)</i>
199	<i>Demolished (Motor Gas Storage Tank)</i>	242	<i>Removed (Hangar B Portable Storage Shed)</i>
200	<i>Demolished (AVGAS Pump Station)</i>	243	<i>Removed (Hangar A Portable Storage Shed)</i>
201	<i>Demolished (Transformer Vault)</i>	244	<i>Removed (Portable Storage Shed)</i>
202	<i>Demolished (Hangar B Line Operators Building)</i>	245	<i>Removed (Portable Storage Shed)</i>
203	<i>Demolished (Hangar B Line Crew Shelter)</i>	246	<i>Removed (Portable Storage Shed)</i>
204	<i>Demolished (Hangar B Line Operators Building)</i>	247	<i>Demolished (Shed or Vault)</i>
205	<i>Demolished (Shed or Fuel Station)</i>	248	<i>Removed (Hangar B Portable Storage Shed)</i>
206	<i>Oil Reclaiming Station</i>	249	<i>Demolished or unassigned number pre-1972</i>
207	<i>Main Entrance Sentry Booth</i>	250	<i>Enlisted Men's Handball Courts</i>
208	<i>Tetrahedron (unknown if exists)</i>	251	<i>Demolished or unassigned number pre-1972</i>
209	<i>Demolished (New AVGAS Loading Stand)</i>	252	<i>Demolished or unassigned number pre-1972</i>
210	<i>Demolished or unassigned number pre-1972</i>	253	<i>Demolished or unassigned number pre-1972</i>
211	<i>Demolished or unassigned number pre-1972</i>	254	<i>Demolished (Bus Stop Shelter)</i>
212	<i>Demolished or unassigned number pre-1972</i>	255	<i>Demolished pre-1972 (WW II Entrance Sentry Booth)</i>
213	<i>Demolished or unassigned number pre-1972</i>	256	<i>Demolished (Airport Entrance Bus Shelter)</i>
214	<i>Demolished or unassigned number pre-1972</i>	257	<i>Demolished (Line Maintenance/Fuel Issue Building)</i>
215	<i>Demolished or unassigned number pre-1972</i>	258	<i>Auto Shop (former Garage-A/C Crash Fire Station)</i>
216	<i>Demolished or unassigned number (c.1947-60)</i>	259	<i>Demolished (Diesel Fuel Tank/Dispensing Stand)</i>
217	<i>Storage (former Liquid Oxygen Facility)</i>	260	<i>NYPD Filling Station (Maintenance Area Filling Station)</i>
218	<i>Demolished or unassigned number pre-1972</i>	261	<i>Transmitter Building</i>
219	<i>Demolished or unassigned number pre-1972</i>	262	<i>Demolished or unassigned number pre-1972</i>
220	<i>Demolished (Jet Fuel Pump Station)</i>	263	<i>Demolished (Radio Beacon, 3 poles)</i>
221	<i>Reassigned to Reserve Center (BOQ Tennis Court)</i>	264	<i>Removed (Aircraft Display)</i>
222	<i>Reassigned to Reserve Center (BOQ Tennis Court)</i>	265	<i>Demolished (Nose Hangar)</i>
223	<i>Reassigned to Reserve Center (BOQ Tennis Court)</i>	266	<i>A/C Wash Rack Building</i>
224	<i>Demolished (Bus Stop Shelter)</i>	267	<i>Vacant (Relocated Married Enlisted Men's Quarters)</i>
225	<i>Demolished (Bus Stop Shelter)</i>	268	<i>Married Officer Quarters C</i>
226	<i>Demolished (Bus Stop Shelter)</i>	269	<i>Married Officer Quarters D</i>
227	<i>Demolished (Hangar A Outbuilding)</i>	270	<i>Married Officer Quarters E</i>
228	<i>Demolished (Hangar B Sonobuoy Storage)</i>	271	<i>Demolished (Station Signal)</i>
229	<i>Demolished (NARDET Paint Shop)</i>	272	<i>Gateway Environmental Ed. Center (NYC Board of Ed.)</i>
230	<i>Demolished or unassigned number pre-1972</i>	273	<i>Remote Revr. Building</i>
231	<i>Demolished or unassigned number pre-1972</i>	274	<i>Generator Building</i>

275	Park Police Headquarters (former New Dispensary)	BUILDINGS/STRUCTURES BELOW NOT NUMBERED	
276	Demolished pre-1972 (Unknown Shed or Vault)		Airport Compass Rose
277	Demolished (Transmission Antennae)		Navy Compass Rose-Helicopter Pad
278	NYC Dept. of Sanitation/Tylunas Hall		Abandoned (Main Barracks Area Mobile Home Courts)
279	Demolished (Outdoor Pool)		Abandoned (West Barracks Area Mobile Home Courts)
280	Demolished (Substation)		Jet Engine Run-Up Stand
281	Demolished (Standby Generator Plant)		Demolished (Sheet & Trip Shooting Houses, 5)
Q1-Q5	Demolished pre-1972 (Quonset Huts)		Demolished (Test Backstop)
			Park Comfort Stations (6) (2000, 2006)
			Campgrounds Tent Platforms, Pavilions (c.1976)
			Aviator Sports Infill Building Hangars 5/6, 7/8 (2006)
			Aviator Sports Chiller Building (2006)
			Aviator Sports Bleachers (2006)
			Model Airplane Announcer's Booth (c.1980)
			Archery Range Pavilion (c.1980)
			Nursery Greenhouse (c.1990)
FORMER U.S. COAST GUARD AIR STATION BROOKLYN (TRANSFERRED TO DEPARTMENT OF THE INTERIOR)			
CG-1	Main Hangar	Buildings/Structures Below Not Numbered	
CG-2	Garage		Coast Guard Seaplane Ramp
CG-3	Demolished (Barracks)		Demolished (Radio towers)
CG-3	Edwards Hall (New barracks, 1973, number reassigned)		Finger Pier
CG-4	Demolished (Engineer Store Room)		Boat House
CG-5	Demolished (North Pyro Locker)		Demolished (Quonset Huts)
CG-6	Demolished (Bosun Store Room)		Swimming Pool (1979)
CG-7	South Pyro Locker		Guard Booth (c.1998)
CG-8	Paint Locker		Temporary Storage Building (c.2000)
CG-9	Unknown		Temporary Training Tower (2001)
CG-10	Demolished (Nose Hangar)		Police Equipment Shed (2004)
CG-11	Unknown		
CG-12	Transformer Vault		
CG-13	Storage Building		
MARINE CORPS RESERVE CENTER (DEPARTMENT OF DEFENSE, TRANSFERRED FROM NAS NEW YORK)			
	Main Building (1975)	Buildings/Structures Reassigned from NAS New York	
	Secondary Buildings (2) (1975)	142	Berthing/Marginal Wharf
		166	Abandoned (BOQ Handball Court)
		173	Abandoned (Seaplane Ramp A)
		221	Abandoned (BOQ Tennis Court)
		222	Abandoned (BOQ Tennis Court)
		223	Abandoned (BOQ Tennis Court)

FEDERAL AVIATION ADMINISTRATION DOPPLER RADAR STATION (DEPARTMENT OF TRANSPORTATION, FROM COAST GUARD AIR STATION BROOKLYN)

	Doppler Radar Tower (c.1997)		Utility Building (c.1997)
<u>Acronyms</u> ACFT = Aircraft ANG = Air National Guard APB = Aviation Patrol Base (NARDET) AVGAS = Aviation Gasoline BOQ = Bachelor Officers' Quarters EM = Enlisted Men NARDET = Navy Air Reserve Detachment (former APB) NYPD = New York Police Department PW = Public Works USCG = United States Coast Guard # = Hangar numbers were reassigned to 3, 4, 5, and 6 (previously 3 through 22, assigned to individual hangars, infill buildings, and lean-tos; simplified to one number per pair of hangars.			

ENDNOTES

- 1 The history of Floyd Bennett Field's administration as part of Gateway National Recreation Area presented here is based on limited information available for this project. An administrative history of the park has not been written to date.
- 2 David K. Shieler, "1-Billion State Development Plan for Bennett Field Scored by City." *New York Times*, 25 May 1970, 1; Richard Haitch, "Airport, Housing Project or National Park?" *New York Times*, 28 May 1972, A1, A8.
- 3 Peter Kihss, "Recreation Area in Harbor Urged," *New York Times*, 12 May 1969, 1.
- 4 "Airport, Housing Project or National Park?"
- 5 National Park Service, U.S. Department of the Interior, "General Management Plan" (National Park Service North Atlantic Regional Office: Unpublished report, August 1979), 1.
- 6 History of the transfer of Floyd Bennett Field from the Navy to the National Park Service in NYC Audubon Society vs. Rodney Slater, U.S. Court of Appeals docket 99-4081, <http://caselaw.lp.findlaw.com/scripts/getcase.pl?navby=search&case=/data2/circs/2nd/994081.html>.
- 7 NYC Audubon Society vs. Rodney Slater.
- 8 National Park Service, "Structures Key Map, Floyd Bennett Field" 20 July 1983, Gateway National Recreation Area archives, Fort Wadsworth (hereafter, GATE archives).
- 9 U.S. Coast Guard, "Air Station Brooklyn, Historical Remarks," undated article, http://www.uscg.mil/history/stations/airstabrooklyn1955_1_300.jpg.
- 10 NYC Audubon Society vs. Rodney Slater.
- 11 "Air Station Brooklyn, Historical Remarks;" NYC Audubon Society vs. Rodney Slater.
- 12 Limited documentation on changes to the landscape was available for this period. The information presented is based on existing conditions, communications with park ranger Linc Hallowell, and park maps and brochures. Plans used to track changes include: Lockwood, Kessler & Bartlett, "Topographic Sheet, Gateway National Recreation Area" (April 1974 & September 1975); National Park Service, "Structures Key Map, Floyd Bennett Field" (20 July 1983); National Park Service, "General Layout, Floyd Bennett Field" (July 1987); National Park Service, "Structures Key Map, Floyd Bennett Field" (3 April 1992, partially updated to 2006); and Barbara Judy, "USCG Air Station Brooklyn Property Map 1936-1988" (Draft

map prepared for Gateway National Recreation Area, 23 May 2008). All plans from Gateway National Recreation Area archives and maintenance files.

13 The pines were apparently planted at Ecology Village because of its location on the original airfield turf where natural succession occurred more slowly. In contrast, natural woods had begun to grow up during the 1970s around Camps Tamarack and Goldenrod.

14 The Development Concept Plan was originally drafted in October 1980 by a group of consultants including M. Paul Friedberg and Partners, Hardy Holzman Pfeiffer Associates, Edwards and Kelcey, Inc., and the Trans Urban East Organization.

15 These reports were not finalized and published until 1981 following completion of the General Management Plan.

16 National Park Service, "Development Concept Plan and Environmental Assessment, Floyd Bennett Field, Gateway National Recreation Area" (Unpublished report, September 1983), 3-18.

17 Pete McCarthy, Gateway District Ranger, communication with authors, 13 October 2005.

18 Neil S. Friedman, "Aviator Sports Complex Is Brooklyn's Field Of Dreams," *Canarsie Courier*, 30 November 2006, <http://www.canarsiecourier.com/news/2006/1130/TopStories/013.html>.

19 In a compromise with the cultural resource management staff, the idea of vegetating the runways was abandoned. Large piles of woodchips were left on taxiway 5. Doug Adamo, Chief of Natural Resources, Gateway National Recreation Area, personal communication with author, 12 June 2007.

20 Doug Adamo.

21 National Park Service, "H.A.R.P." brochure, <http://www.nps.gov/gate/supportyourpark/upload/HARP%20Rack%20Card%20final%201.pdf>.

Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

National Park Service Period, 1972-2008



National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

1. Aerial photograph, 2007
2. Lockwood, Kessler & Bartlett survey, 1975
3. NPS, Structures Key Map, Floyd Bennett Field, 1983

DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

LEGEND

	Property, lease boundary
	Building/structure, inventory number
	Paved circulation
	Unpaved circulation
	Piles
	Fence, light
	Woods, specimen tree
	Berm, mulched area
	Lawn or managed grassland
	Upland, low scrub
	Marsh
	Open water
	Site of feature removed since 1972
	Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1972 not dated.
3. Vegetation species unknown except where indicated.
4. Plan shows conditions at end of period in 2008.
5. See Appendix Table 3 for building key.
6. Plan does not show minor park structures (sheds, shelters, tent platforms, etc.) and furniture (benches, picnic tables).

Drawing 1.5





Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

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1. Aerial photograph, 2007
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DRAWN BY

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Illustrator CS3, 2008

LEGEND

- Property, lease boundary
- Building/structure, inventory number
- Paved circulation
- Unpaved circulation
- Piles
- Fence, light
- Woods, specimen tree
- Berm, mulched area
- Lawn or managed grassland
- Upland, low scrub
- Marsh
- Open water
- Site of feature removed since 1972
- (1982) Date feature constructed during period, if known

NOTES

1. All features shown in approximate scale and location.
2. Features added prior to 1972 not dated.
3. Vegetation species unknown except where indicated.
4. Plan shows construction from 1972 to 2008.
5. See Appendix Table 3 for building key.
6. Plan does not show minor park structures (sheds, shelters, tent platforms, etc.) and furniture (benches, picnic tables).

Drawing 1.5

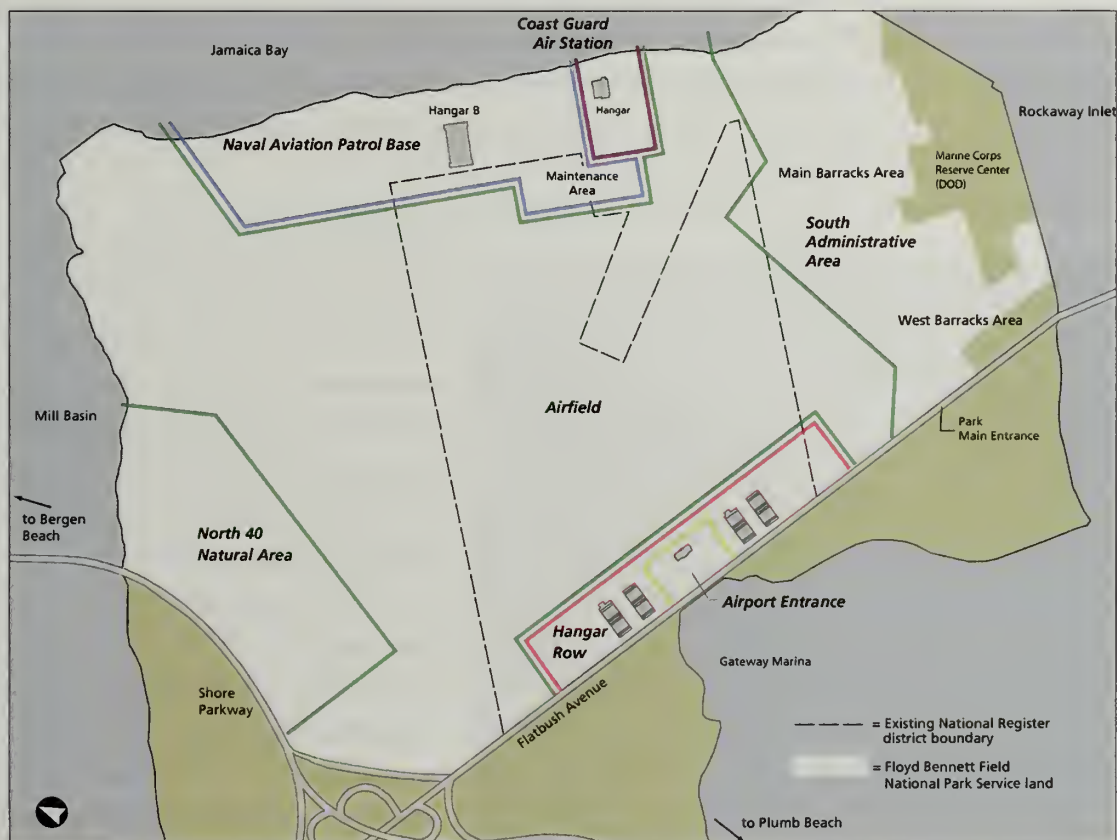
2. EXISTING CONDITIONS

This chapter provides a narrative overview of the existing (2008) landscape of Floyd Bennett Field, including descriptions of its setting, administration, and use. The emphasis of the narrative is on the area of Floyd Bennett Field presently under National Park Service administration, including those areas presently leased, but excluding the part of NAS New York that was transferred to the Army as a reserve center in 1972. Documentation for the chapter is based largely on field observation and aerial photographs, along with current National Park Service surveys and management documents.

This chapter organizes the landscape by seven character areas, which are areas of the landscape defined by distinct physical qualities and historical uses and attributes.¹ The character areas are (fig. 2.1):

- Hangar Row, including the secondary buildings at its south end
- Airport Entrance, the area between the Administration Building and Flatbush Avenue; this character area is within Hangar Row
- Airfield, including runway 12-30 and the former airport seaplane base/ Navy boat basin area
- Naval Aviation Patrol Base, the former NARDET base and the adjoining maintenance area

Figure 2.1: Plan of Floyd Bennett Field showing landscape character areas and existing National Register district boundary. (SUNY ESF.)



- Coast Guard Air Station Brooklyn, corresponding to its pre-1972 limits excluding runway 12-30 and the former seaplane base/boat basin
- North 40 Natural Area, encompassing the former Navy ammunitions-communication area
- South Administrative Area, encompassing the former naval main barracks area and west barracks area. The south limit of this character area is the fence along the Marine Corps Reserve Center, which serves as the management boundary between Department of Interior and Department of Defense properties (the actual property line does not correspond to the fence line).

The National Register-listed historic district that corresponds to the limits of the original municipal airport minus the facilities along Jamaica Bay encompasses all of Hangar Row and the airport entrance, plus a portion of the airfield (see fig. 2.1).

LANDSCAPE SETTING

Floyd Bennett Field is located along the shore of Jamaica Bay, a large tidal estuary at the western end of Long Island that is separated from the Atlantic Ocean by the Rockaway Peninsula barrier beach. The field is surrounded on three sides by water: Jamaica Bay on the east, Mill Basin on the north, and Rockaway Inlet to the south (see fig. 2.1). On the west side across Flatbush Avenue is Gateway Marina and Dead Horse Bay, along with additional lands belonging to Gateway National Recreation Area. The large areas of water, marshlands, and relative lack of development provide an open, expansive character to the setting of Floyd Bennett Field, in contrast to the more densely developed area of Brooklyn north of Shore Parkway.

Figure 2.2: View looking south along the northbound side of Flatbush Avenue with Hangar Row and the bike path to the left, May 2008. The boats at the right are part of Gateway Marina. (SUNY ESF.)



Vehicular access to Floyd Bennett Field is from Flatbush Avenue, a four-lane arterial that extends from the Manhattan Bridge at the East River southeast across Brooklyn. Just before Floyd Bennett Field, Flatbush Avenue crosses beneath Shore Parkway, a limited access highway completed in 1940, and then proceeds along the western boundary of Floyd Bennett Field on an extension built in 1925 across the marshes to Barren Island. Here, Flatbush Avenue has a divided median dating to improvements made in the late 1930s and early 1940s, with rows of older sycamores and more recent

Japanese pagoda trees (fig. 2.2). A bike path built in c.2004, part of the Rockaway-Gateway Greenway, parallels the east side of the road. Flatbush Avenue widens at the toll plaza to the Gil Hodges Memorial Bridge, originally named the Marine Parkway Bridge and opened in 1937. This bridge provides access to the oceanfront communities and beaches on the Rockaway Peninsula.

PARK ADMINISTRATION AND USE

Floyd Bennett Field is part of Gateway National Recreation Area (NRA), a series of former military and city park lands in lower New York Harbor and the adjoining coastal areas established in 1972 as one of the first two urban recreational areas in the National Park System. The combined components of Gateway total approximately 18,650 acres and are organized into three units: Jamaica Bay, Sandy Hook, and Staten Island. Floyd Bennett Field is one site within the Jamaica Bay Unit, with other sites being Fort Tilden and Jacob Riis Park on the Rockaway Peninsula, Canarsie Pier along the Jamaica Bay shore, and Jamaica Bay Wildlife Refuge consisting of most of the undeveloped land and tidal estuary in the bay. Floyd Bennett Field comprises approximately 1,450 of Gateway NRA's total acreage, making it the largest single parcel of open land in New York City.

The Floyd Bennett Field park site consists of most of the former Naval Air Station, New York property that was transferred from the Department of Defense in 1972, and the much smaller U.S. Coast Guard Air Stations property, transferred from the federal Department of Transportation in 1998. The park site also includes several other areas not addressed within this report, including Gateway Marina and the lands along the west side of Flatbush Avenue that were formerly part of the city's Brooklyn Marine Park (see fig. 2.1). Two other former city properties, Plumb Beach along the south side of the Shore Parkway west of Flatbush Avenue, and Bergen Beach on the east side of the parkway north of Mill Basin, are also administered as part of Floyd Bennett Field.

The National Park Service manages Floyd Bennett Field primarily for recreation and natural resource conservation, although the park maintains other uses through leases and partnerships. While it contains historic resources, Floyd Bennett Field is not administered as a historic site. At present, approximately 329 acres of the field are listed in the National Register for their significance as New York City's first municipal airport. Because the existing historic district follows the property line of the original airport, it encompasses only a small part of the field, much of which the Navy developed during World War II. The park has focused its preservation and adaptive reuse efforts at the Hangar Row portion of the National Register district. The remainder, encompassing portions of the airfield with its runways and taxiways, is managed as a natural area with grasslands and woods.

Park administration is headquartered in a former World War II-era barracks within the South Administrative Area (former main barracks area). The National Park Police maintains its Gateway headquarters in an adjacent building that was a Navy dispensary built in c.1968. Additional park office and meeting space is maintained in the 1931 Administration Building in Hangar Row, now known as the Ryan Visitor Center. Park maintenance utilizes a former fire station and garage near the park headquarters building (69), plus several other buildings in the Navy's maintenance area along the east side of the airfield. The park also maintains housing for park employees in some of the former Navy officer housing in the South Administrative Area.

The park offers the public a number of recreational opportunities at Floyd Bennett Field, including environmental programs, youth camping, nature trails, a model airplane flying field, sports fields, a remote-control car track, and an archery range. The Ryan Visitor Center provides some historical interpretation of Floyd Bennett Field and information about current park activities in the central lobby. Because Floyd Bennett Field has far more infrastructure than the park can use, the National Park Service has turned to concessions and partners to use excess facilities and provide additional recreational and education opportunities. The largest recreation concession is Aviator Sports, which transformed the north half of Hangar Row into an active recreation complex with ice rinks, gyms, rock-climbing walls, and outdoor fields. Park partners that offer recreational opportunities include the Floyd Bennett Garden Association, which oversees the largest community gardens in Brooklyn located on the airfield near the south end of Hangar Row, and a cricket club that maintains a cricket field at the north end of Hangar Row. The Historic Aircraft Restoration Project (H.A.R.P.) occupies Hangar B, where volunteers work on restoring vintage aircraft in the cavernous World War II-era hangar. Within the South Administrative Area, the New York City Board of Education operates the Gateway Environmental Education Center, and Polytechnic University (part of New York University) maintains ballfields.

In addition to partners and concessions, the National Park Service also maintains special use permits with two city agencies for exclusive, non-public use of portions of Floyd Bennett Field. The largest in land area is with the New York City Police Department, which occupies the former U.S. Coast Guard Air Station Brooklyn property that the U.S. Department of Transportation transferred to the Department of the Interior in 1998. The city police use this area for its aviation unit, which continues it as a functioning helicopter facility, the only active aviation use remaining at Floyd Bennett Field. The facility is enclosed by a cyclone fence and has a guarded gate at the south end. Within the police's special use area is a 1.8-acre parcel retained by the U.S. Department of Transportation. Here, the

Federal Aviation Administration maintains a Doppler radar tower erected in c.1997.²

North of the former Coast Guard Air Station, the park maintains a special use permit with the New York City Department of Sanitation for the south end of the former Naval Aviation Patrol Base. This property functioned as a Naval Air Reserve Detachment before it was decommissioned and transferred to the Department of the Interior in c.1983. The city uses this area, which contains Tylunas Hall, a large building constructed as barracks by the Navy in 1970, to provide vehicle training for sanitation workers. Access is from taxiways 1 and 2, which connect to Hangar Row at the opposite side of the airfield.

THE FLOYD BENNETT FIELD LANDSCAPE (DRAWING 2.1)

Floyd Bennett Field is an expansive landscape characterized by open fields, extensive areas of concrete and asphalt pavement, young second-growth woods and thickets, engineered and natural shorelines, and a variety of buildings clustered into what were historically flight-path clear zones. Although no longer used for military or aviation purposes (except for city police helicopters), the landscape still reflects its origins as New York City's first municipal airport and as a major naval aviation base in the World War II home front. The following description provides an overview of the existing landscape by character areas, beginning with the original airport development at Hangar Row and proceeding across the airfield to Jamaica Bay, and ending with the areas to the north and south of the airfield developed during World War II. The original airport entrance area surrounding the Administration Building is a separate character area within Hangar Row. (For a key to the numbered buildings and structures, see Table 1.3 at the end of the site history chapter.)

HANGAR ROW

Hangar Row, so named because of its linear arrangement parallel to Flatbush Avenue, formed the core of the original municipal airport. Initially built in 1929-31, Hangar Row is located along the western edge of the airfield adjacent to runway 15-33 (later taxiway 10, presently the public entrance road). Hangar Row is defined spatially by an expansive, flat, and open character, bordered on the west by tree-lined Flatbush Avenue and on the east by the open airfield. Each building within Hangar Row is oriented either parallel or perpendicular to Flatbush Avenue, lending the landscape a geometric arrangement.

Access to Hangar Row is from the main park entrance drive off Flatbush Avenue in the South Administrative Area, which connects to a four-lane public entrance road

constructed over runway 15-33 (taxiway 10) in c.1996. The original entrance to Hangar Row off Flatbush Avenue is closed, although the diagonal driveways remain. As drivers proceed north along the former runway, the drive turns west toward Hangar Row where it terminates in a series of large parking lots lining the east side of Hangar Row.

The main part of the apron surrounding the hangars is constructed of concrete, with the areas surrounding the hangars surfaced with black asphalt pavers which remain visible in areas, particularly around vacant hangars 1-2 and 3-4 (fig. 2.3). Much of the original apron has been removed or concealed with Aviator Sports facilities and entrance drives and parking lots. With sidewalks, curbs, and lights, these parking lots obscure the open circulation of the apron and former airport gate and passenger boarding area adjoining the Administration Building, although the site of the passenger tunnel hatches and loading platforms was not impacted (fig. 2.4). The apron surrounding hangars 5-6 and 7-8 has been removed or concealed with the Aviator Sports development. The apron north of hangar 7-8, location of two World War II-era frame hangars removed in c.1979, is covered by Aviator Sports fields (fig. 2.5). These artificial turf fields feature bleachers, scoreboards, and stadium lights. A chain-link fence, approximately twelve-feet tall, encloses the fields.

The original municipal airport buildings in Hangar Row are unified by a common Art Deco architectural style employing buff-colored tapestry brick walls and cast-stone streamlined classical details. The largest buildings are the eight hangars, which are grouped in



Figure 2.3 (top): View of hangars 3-4 looking northwest toward Flatbush Avenue showing condition and remaining original asphalt block apron, December 2006. (SUNY ESF.)

Figure 2.4 (middle): View southeast from the Administration Building roof showing the parking lots built on the Hangar Row apron, December 2006. This is the former airport gate-boarding area and war-time parade grounds. The concrete apron is visible to either side of the parking lot. (SUNY ESF.)

Figure 2.5 (bottom): View south at the north end of the Hangar Row apron showing Aviator Sports and Recreation outdoor fields, December 2006. The original concrete surface of the apron is visible in the foreground. (SUNY ESF.)

pairs connected by infill buildings added in 1935. (The pairs of hangars are numbered 3 through 6; each individual hangar also has its own number from 1 through 8, as in “hangar 1”) The north two pairs of hangars (5-6 and 7-8) were recently rehabilitated and expanded by Aviator Sports for housing indoor recreation facilities, including two ice rinks, three basketball courts, two volleyball courts, a fitness center, climbing wall, gymnasium, party rooms, and a food court. The project retained the exterior walls of the hangars, but replaced the hangar doors, and altered the massing of the buildings and the spatial character of Hangar Row though the addition of a large infill building that spans the former open space between the two pairs of hangars (fig. 2.6). New parking lots and an entrance drive were also added in front of the building on the apron, and air conditioning units and a freestanding building for the ice rinks were constructed in front of the hangar doors of hangars 5 and 6, facing the airport entrance area.

South of the Administration Building are hangars 1-4, which stand vacant aside from being used on occasion for storage. The park recently stabilized hangars 3 and 4, (those closest to the Administration Building and home to the New York City Police

prior to 1998), with masonry repairs and a new roof, although portions remain in poor condition (see fig. 2.3). Hangars 1 and 2, which have stood vacant since c.1972, are in very poor condition with collapsed roofs, cracked walls, and broken and boarded-up windows.

South of hangars 1-4 off the south end of the Hangar Row apron is a cluster of maintenance and utility buildings, remnants of a once larger complex. One of the most distinctive buildings is the Dope Shop (26), a small hangar originally used to apply varnish to aircraft. Built in 1937 in the standard airport style, the presently vacant building forms the southern terminus of Hangar Row (fig. 2.7). Many of the windows are broken and notices on the east side of the building warn visitors that the building contains hazardous polychlorinated biphenyls.



Figure 2.6: Looking west at the contemporary Aviator Sports infill building between hangars 5-6 and 7-8, May 2008. In the foreground is the new entrance drive to the complex built over the original concrete Hangar Row apron, visible at right. (SUNY ESF.)

Figure 2.7: The Dope Shop (26) with the smaller sewer pump house (30) at the left looking southwest, December 2006. The pavement in the foreground is part of the Hangar Row apron. (SUNY ESF.)

Nearby are several small utility buildings, including a sewer pump house (30) and transformer vault (57) also built in the standard airport style during the 1930s (fig. 2.8, see also fig. 2.7). South of the Dope Shop is a small concrete-block paint storage building (126) built during World War II that is in ruins (fig. 2.9). Nearby is

one of the five contemporary park comfort stations serving the adjoining community gardens. The park constructed this building in c.2006 on top of the apron within the historic aircraft circulation system.

Just south of the Dope Shop are the remains of a complex of building constructed by the Navy immediately before and during World War II as barracks and training facilities. Much of this formerly open area has become overgrown with scrub and woods, and the asphalt roads are permeated by weeds. The Navy buildings here contrast markedly with the earlier airport buildings, using utilitarian concrete block and frame construction with clapboard siding, double-hung windows, and gable roofs. Adjoining Flatbush Avenue is the former Navy fire house (50), and across a driveway that was originally the airport south boundary road is the former Synthetic Training Building (54) (figs. 2.10, 2.11). Unoccupied since 1972, both buildings have boarded and broken windows and doors. Several buildings have been removed from this area since the end of World War II, notably a large barracks (27) built in 1941 and used by WAVES (Women Accepted into Volunteer Service) during the war. South of the training building is the former World War II main entrance



Figure 2.8 (top): The transformer vault (57) located at the south end of Hangar Row, view south, December 2006. Successional woods have grown in the formerly open surrounding area. (SUNY ESF.)

Figure 2.9 (middle): Remains of the World War II-era paint storage building (237), view southeast, December 2006. (SUNY ESF.)

Figure 2.10 (bottom): The vacant Navy fire house (50), view northeast, December 2006. The former airport south boundary road is the pavement in the foreground. (SUNY ESF.)

to NAS New York, which has been closed since c.1951 when the current main entrance was constructed (fig. 2.12). During the war, this entrance was flanked by a guard booth and police station.



AIRPORT ENTRANCE

The airport entrance, encompassing the landscape between Flatbush Avenue and the Administration Building, is distinguished not only by its distinct spatial character, but also its distinct character originally intended to provide a welcoming and park-like setting for air travelers. The park no longer uses this area as an entrance. Visitors arriving in automobiles enter on a contemporary entrance road that terminates on the opposite side of the Administration Building on the Hangar Row apron.

The airport entrance is framed on the north and south by hangars 3-4 and 5-6, and on the east by the Administration Building (1), a two-story red-brick neoclassical-style building completed in 1931 that forms the focal point of the landscape (fig. 2.13). The surrounding landscape, developed between 1931 and 1935 in part by the Works Progress Administration, is organized by two diagonal drives that frame a central lawn area. The lawn and drives are fenced off from the Administration Building and the rest of Hangar Row by a contemporary black-painted metal picket fence that extends along the inside of the diagonal entrance drives and along Flatbush Avenue, with bollards blocking access to the drives (see fig. 2.13).

Figure 2.11 (top): The former Navy synthetic training building (54), view southwest toward Flatbush Avenue, December 2006. (SUNY ESF)

Figure 2.12 (middle): The closed World War II-era Navy entrance drive, view looking east from Flatbush Avenue, December 2006. A guard booth and police station flanked the entrance during World War II. (SUNY ESF)

Figure 2.13 (bottom): The Administration Building and airport entrance area, view looking southeast, November 2005. The fence and bollards restrict access to this closed entrance. (SUNY ESF)

The lawn area features a central concrete walk on axis with the main entrance of the Administration Building. The walk is lined by mature sycamore trees and forms a circle around a flagpole and entrance sign that reads “Floyd Bennett

Airport” (fig. 2.14). This rustic wood sign, set on a brick foundation, is a reconstruction of the original built in 1935. The outer edges of the lawn are framed by concrete sidewalks that parallel the diagonal entrance drives, with young deciduous trees and a clipped privet hedge lining the outermost edge along the metal pick fence. The sidewalks are lined by contemporary light standards with Central Park-style luminaires. Several interpretive waysides are located within the lawn area, along with Victorian-style cast-iron benches and water fountains, and contemporary-styled trash bins (fig. 2.15).



The closed entrance drives converge on a small central parking area in front of the Administration Building originally surfaced in asphalt pavers. The park recently reconstructed this parking area in asphalt and rebuilt adjoining curbs and sidewalks in gray-tinted concrete. The drives originally led to larger parking lots to the north and south of the building that the park has replaced in part with lawn (fig. 2.16)



Figure 2.14 (top): The airport entrance sign, a reconstruction of the 1936 original, and circular walk from Flatbush Avenue, view east from Flatbush Avenue, May 2008. The flagpole, dating to 1935, is visible in back of the sign. (SUNY ESF.)

Figure 2.15 (middle): The airport entrance area looking southeast from Flatbush Avenue showing the fence and assorted small-scale features added in c.2000, May 2008. At left is one of the diagonal entrance drives. (SUNY ESF.)



Figure 2.16 (bottom): The south side of the airport entrance area looking southwest from the roof of the Administration Building, December 2006. This view shows the south diagonal drive and site of one of the airport's public parking areas (at left) that the park has converted to lawn. (SUNY ESF.)

AIRFIELD

The airfield has an expansive and barren character that is defined by long paved runways and taxiways, open grasslands, and distant views. The landscape no longer has the feeling of an active airfield. Since the Navy ceased aviation at the field in the early 1970s, the runways have been closed off, covered in earth and vegetation, or redesigned for automobile use, while most of the open turf areas once necessary for sight lines and flight-path clearances have grown into woods and thickets, or are managed as natural grasslands.

The runways and taxiways loosely form a rectangle with two interior diagonals. Runway 15-33, constructed in 1928 and later redesignated as taxiway 10, defines the western boundary of the airfield, extending north to south parallel to Flatbush Avenue and the Hangar Row apron. The runway presently serves as the main public entrance road to Hangar Row. Built on top of the original runway in c.1996, the road has an asphalt surface striped in four lanes with a center turn lane and guiderails running along the sides (fig. 2.17). Earthen berms and concrete barriers close off the intersections with adjoining runways and taxiways (fig. 2.18). The

second original runway, 6-24 and redesignated as taxiways 1 & 2 during World War II, extends perpendicularly from runway 15-33 just south of the Administration Building. It serves as the primary access road to the Jamaica Bay facilities. Parallel to taxiways 1 and 2 along the northern edge of the airfield is runway 6-24, built during World War II as a replacement for the earlier runway 6-24 and lengthened in c.1960. It is the only runway that retains its full open extent except at the west end where it is framed by berms.

The two diagonal runways, 1-19 and 12-30, cross at the center of the airfield. Built in 1935 through the Works Progress Administration and lengthened during the Korean War, the runways no longer read as continuous circulation features. Both are partially closed off with berms and concrete barriers, and



Figure 2.17 (top): View north along the four-lane entrance road constructed over runway 15-33 (taxiway 10), May 2008. Note original concrete pavement of the runway visible to the right of the guiderail. (SUNY ESF.)

Figure 2.18 (bottom): One of the berms installed to close off the intersection of runway 1-19 and the public entrance road (runway 15-33), view south, December 2006. (SUNY ESF.)

the park has covered large sections with mulch in an effort to allow vegetation to grow over the pavement. At the northeastern extension of runway 1-19 is a remote-controlled airplane flying field with an announcer's booth and a covered seating area (fig. 2.19). The northeastern half of runway 12-30, which the park

leases to the New York Police Department, is used as a vehicle storage area and is enclosed by a chain-link fence.



The approaches to the runways are surfaced in a soil cement and asphalt that are slowly becoming overgrown (fig. 2.20). Built between 1951 and 1960 during extension of the runways, the Navy apparently designed these areas to stabilize the earth from strong jet back draft. The park does not use the approaches for any particular purpose at present, but does manage the area surrounding the northwest approach to runway 12-30 as part of the North 40 Natural Area. Once maintained as open space for the flight-path clear zone, the area is now mostly wooded. There is a pond and photo shelter off the northeast side of the runway approach that the park built in c.1980 for wildlife viewing (fig. 2.21)



The taxiway system, which the Navy developed during World War II for circulation around the periphery of the airfield, tie together the end of each runway, with the exception of taxiways 1 and 2 that run through the center of the airfield and taxiway 7 that led south to the seaplane base along Rockaway Inlet. The taxiways are generally narrower than the runways and are surfaced in asphalt. The Navy



Figure 2.19 (top): The announcer's booth along the west side of the remote-controlled airplane flying field on the runway 1-19 extension, view northeast, December 2006. (SUNY ESF.)

Figure 2.20 (middle): The southwestern approach to runway 1-19 looking north toward Hangar Row showing the soil-cement surface, December 2006. The road at right is an abandoned section of Aviation Road that was the main access to Hangar Row during World War II. (SUNY ESF.)

Figure 2.21 (bottom): The North 40 Natural Area pond within the approach to runway 12-30 looking south, December 2006. (SUNY ESF.)

numbered the runways 1 through 10 (there was apparently no taxiway 9), but the park does not follow these designations today. The park uses taxiways 1, 2, 6, 8, and 10 as roads, but has closed off taxiways 3, 4, 5, and 7 with berms, fences, and guiderails. Mulch is stored on taxiway 5 at the east side of the field (fig. 2.22).



Intersecting taxiway 4 along the south side of the airfield are remnants of the municipal airport's south boundary road built in c.1928 that led from Flatbush Avenue to the airport seaplane base along Jamaica Bay (current New York City police area).



The park manages the land between the runways and taxiways as natural areas, wildlife habitat, and campgrounds. The center part of the airfield is managed grasslands, cut semi-annually to keep down woody vegetation (fig. 2.23). Along the south and north sides of the airfield are thickets and deciduous woods that have grown up on formerly open and mown areas through natural succession (fig. 2.24). Not all of the woods within the airfield have grown up naturally. Along the southern side are pine woods planted in c.1974 that shelter the Ecology Village campgrounds. These contain five individual camps with open wood-frame shelters, picnic tables, wood tent platforms, wood benches, and a variety of other small-scale features (figs. 2.25). Restrooms and indoor facilities for Ecology Village are across taxiway 4 in the South Administrative Area. In the northern half of the airfield are two additional campgrounds established at the same time in the early 1970s, located in



Figure 2.22 (top): Taxiway 5 near the maintenance area looking south, December 2006. The taxiway, which is blocked to the south by a the New York City police fence, is used as a storage area for mulch. (SUNY ESF.)

Figure 2.23: View northeast toward Hangar B showing springtime appearance of the managed grasslands, May 2008. In the distance are successional woods that have grown up on portions of the formerly open airfield. (SUNY ESF.)

Figure 2.24: Looking north along taxiway 6 at the northeastern side of the airfield showing dense successional woods that have grown up on the formerly open field, May 2008. (SUNY ESF.)

clearings in the successional woods at the site of a World War II-era emergency dirigible landing area. Named Camps Tamarack and Goldenrod, the campgrounds feature shelters with picnic tables, but no tent platforms (fig. 2.26). A comfort station built in c.2006 along taxiway 6 services these campgrounds.



Other recreational features within the airfield include the Floyd Bennett Field community gardens, located on formerly open turf between the park entrance road (taxiway 10/runway 15-33) and the Hangar Row apron. There are 557 plots enclosed by a variety of fence styles and containing many different types of vegetation and furnishings developed over the past two decades (fig. 2.27). The gardens feature sculptures, two wood gazebos, and a picnic area along the west side of the gardens. Gardeners park on runway 15-33 (taxiway 10) and Hangar Row apron. In c.2006, the park built a comfort station on the Hangar Row apron to service the gardens.

At the southeast corner of the airfield, in the path of runway 12-30 just south of the former Coast Guard hangar, is the Federal Aviation Administration's Doppler radar tower that is on a small parcel under separate federal ownership (fig. 2.28). The surrounding area that is leased to the New York City Police Department contains remnants of roads and buildings that date to the area's use as the airport seaplane base between 1931 and 1941, and as the Navy's boat basin and recreation area during World War II. Extending out into Jamaica Bay are wood

Figure 2.25 (top): One of the Ecology Village campgrounds in the pine plantation at the south side of the airfield, May 2008. (SUNY ESF.)

Figure 2.26 (middle): A picnic shelter and open area at Camps Tamarack and Goldenrod at the eastern side of the airfield on the former dirigible landing area, view southeast, December 2006. (SUNY ESF.)

Figure 2.27 (bottom): The community gardens looking north along taxiway 10 (runway 15-33) toward Hangar Row, December 2006. (SUNY ESF.)

piles that are remnants of the airport seaplane pier and airport seaplane built in c.1932, and of a Navy boat basin pier built in c.1942.

Scattered throughout the airfield are many remnants from the landscape's use as an active airfield. These include minor roads and paths, two compass roses,

electrical utility boxes, and electrical components from flight landing equipment (fig. 2.29). These remnants have not been inventoried for this report.



NAVAL AVIATION PATROL BASE

The former Naval Aviation Patrol Base, developed by the Navy between 1940 and 1967 along the Jamaica Bay shoreline north and east of the Coast Guard air station, consists of three components: the hangar area along Jamaica Bay, a maintenance area bordering the airfield, and a utility-storage area north of the hangar area.



The hangar area is unified by a large concrete apron measuring approximately 2,150 feet long by 600 feet wide that is connected to taxiways 1-2, 5, and 6. The apron is supported by a timber bulkhead along the Jamaica Bay shoreline. Extending into the bay from the apron is seaplane ramp B, a concrete slab structure built in c.1942 (fig. 2.30). The park uses this ramp to haul abandoned boats from Jamaica Bay.³ South of this ramp are piles remaining from a seaplane ramp built along with Hangar A in c.1940. The chain link fence-enclosed south half of the



Figure 2.28 (top): The southeast end of the airfield in the approach to runway 12-30 showing the FAA Doppler radar tower and Coast Guard hangar, view northeast, December 2006. (SUNY ESF.)

Figure 2.29 (middle): View east across the airfield from the Hangar Row apron, December 2006. This photo shows one of the minor roads and an unidentified small-scale feature (at the right) that date from the landscape's use as an active airfield. (SUNY ESF.)

Figure 2.30 (bottom): Distant view of seaplane ramp B looking southeast from the Naval Aviation Patrol Base apron, December 2006. In the foreground is the timber bulkhead for the c.1952 apron extension. (SUNY ESF.)

apron is leased to the New York City Department of Sanitation. Within this area are remnants of the footings and door tracks from Hangar A built in 1940 prior to World War II and demolished in c.1998 (fig. 2.31). The sanitation department's offices and classrooms are located at the south end of the apron in Tylunas Hall, a Navy barracks built in 1970 and now known as the Academic Institute Building

(fig. 2.32). West of this building is a contemporary parking lot built over the apron; the lot on the east side is an enlargement of an earlier parking lot associated with World War II-era frame barracks that stood on the site of Tylunas Hall.



Within the north half of the patrol base apron is Hangar B, a match of Hangar A completed in 1941 to house seaplanes (fig. 2.33). This steel-frame building, the largest at Floyd Bennett Field, is occupied by H.A.R.P. for its aircraft restoration work (fig. 2.34). Unlike the Hangar Row hangars, Hangar B is a strictly utilitarian structure without ornamentation, possibly built to a standard Navy plan by the noted industrial architect Albert Kahn. On the west side of the hangar is a lean-to addition built in c.1952.



At the north end of the patrol base apron, which the Navy expanded during the Korean War, is a set of concrete jet engine run-up stands built in c.1952, now covered in overgrowth (fig. 2.35). In the wooded area north of apron and east of taxiway 6 and the World War II-era patrol road is a former utility area developed between 1952 and c.1967.



Figure 2.31 (top): Remnants of Hangar A (door tracks), view east toward Jamaica Bay, December 2006. This part of the patrol base apron is used as a city sanitation training area. (SUNY ESF.)

Figure 2.32 (middle): Tylunas Hall, a former Navy barracks at the south end of the Naval Aviation Patrol Base, view east, December 2006. This building, constructed in 1970, is presently used by the city sanitation department. (SUNY ESF.)

Figure 2.33 (bottom): Hangar B, constructed in 1941 and presently home to H.A.R.P., view southeast from taxiway 6, December 2006. The lean-to dates to c.1952. (SUNY ESF.)

This area includes a fenced-in scrap yard presently used as a towing service's lot, with an open steel shed (205) built in c.1952, possibly as a fuel station (fig. 2.36). North of this scrap yard is a cluster of small buildings including two concrete ammunition magazines built in c.1958 and two small brick-faced electrical utility buildings constructed in c.1967. These buildings are abandoned and covered in vegetation.



The maintenance area east of the patrol base apron is a linear cluster of buildings of varying sizes and materials. The complex lines the east side of the airfield spanning the seaplane patrol base and the Coast Guard air station, and is connected to the patrol base apron by a series of driveways. There are presently twelve buildings in the complex, most of which the Navy constructed in 1942 to support the operation of the air station. The northern half of the complex is anchored by the Navy general storehouse (98), a three-story concrete building that the park continues to use for storage (fig. 2.37). To the south is the former cold storage building (97) that the park also uses, and the abandoned brick Power Plant B (96) and former torpedo storage building (94) that are vacant and in poor condition (see fig. 2.37). Smaller structures include a sewer pump station (99) and a water storage building (178), also dating to World War II.

The south half of the maintenance area, separated by a chain-link fence, is within the area leased to the New York City Police Department that was part of the Coast Guard Air Station Brooklyn between 1972 and 1998. Here are located two large maintenance buildings (90, 91) and a sewer pumping station (89)

Figure 2.34 (top): One of the H.A.R.P. volunteers working on an aircraft inside Hangar B, October 2005. (SUNY ESF.)

Figure 2.35 (middle): The jet engine run-up stands built in c.1952 at the north end of the Naval Aviation Patrol Base apron, view west, December 2006. (SUNY ESF.)

Figure 2.36 (bottom): The scrap yard north of the Nava Aviation Patrol Base apron, view northeast, December 2006. The shed is building 205 constructed in c.1952. (SUNY ESF.)

dating to World War II (fig. 2.38). Along the east side adjoining taxiway 5, the police added a large temporary building in c.2004. Around the same time, the police also built a memorial garden at the southeast corner of the maintenance area (fig. 2.39). Much of the area is occupied by police cars, trucks, and other vehicles.



COAST GUARD AIR STATION BROOKLYN

Along the Jamaica Bay side of Floyd Bennett Field is the former Coast Guard Air Station Brooklyn, a ten-acre area south of the Naval Aviation Patrol Base that was initially developed in 1936-1938 on land leased from the city. The station was absorbed by the Navy during World War II, and then was reestablished as a separate federal property until its 1998 transfer to the National Park Service. The park leases the property, along with adjoining areas transferred by the Navy to the Coast Guard in c.1972, to the New York City Police Aviation Unit. These adjoining areas include the southeastern half of runway 12-30, south half of the maintenance area, and former airport seaplane base and World War II-era boat basin/recreation area. These three ancillary areas are not included within the Coast Guard Air Station character area because they were part of the naval air station prior to 1972.



The core of the air station is the hangar (CG-1), a white-painted concrete building completed in 1937.



Figure 2.37 (top): Looking north through the center of the maintenance area showing the general storehouse (98) in the background, torpedo storage building (94) at right, and powerhouse B (96) at left, December 2006. (SUNY ESF.)

Figure 2.38 (middle): View southwest at two World War II-era storage buildings (90, 91) in the south half of the maintenance area that is presently leased to the city police, December 2006. The open area in the foreground contained buildings up until the 1980s. At right is the park-managed building 94. (SUNY ESF.)

Figure 2.39 (bottom): The contemporary police memorial garden at the south end of the maintenance area, view southwest, December 2008. (SUNY ESF.)

Designed in the Moderne style in a nod to the Coast Guard's nautical function, the hangar features a barrel-arched roof with large sliding doors and flanking one-story flat-roof lean-tos (see fig. 2.28). These lean-tos feature octagonal bays on the south façade. On the north side is a large two-story office wing, which has a flat roof, Coast Guard emblem on the parapet, and horizontal arrangement of windows that stretch across the entire façade (fig. 2.40). The office wing borders a shallow lawn area with yew and privet hedges, and scattered younger specimen trees including Austrian pine, birch, and spruce. Two small additions completed in 1964 and 1969 extend from the side lean-tos. The area to the south and west of the hangar consists of open lawn once used as a ballfield, a concrete apron, and a taxiway that leads to a seaplane ramp and helicopter-landing pad dating to c.1955. The south part of the apron was built in c.1955 on property leased from the Navy.

North and east of the hangar are a number of ancillary buildings accessed from a drive that widens in front of the hangar, where there is a flagstaff with yardarms added at some point between 1963 and 1973. At the west end of this drive is a garage (CG-2) built in 1937 in the same Moderne style as the hangar. It has six

bays and a flat roof with horizontal banding below the parapet (fig. 2.41). To its north is a one-story white-painted concrete storage building (CG-13) erected in 1959. East of this building within a small lawn area is a Coast Guard memorial, a pyramidal stone monument installed between 1955 and 1959. To the east is an equipment shed built by the police in 2004, which is next to a transformer vault (CG-12) dating to World War II and paint locker (CG-8) built in 1959. Farther east on the site of World War II-era barracks is an abandoned swimming pool built in 1979. Next to the pool and parallel to the bulkhead along Jamaica Bay is Edwards Hall (CG-3), a former barracks building erected by the



Figure 2.40 (top): The Coast Guard hangar (CG-1), view looking southeast at the office wing, November 2005. The building presently houses offices for the New York City Police Aviation Unit. (SUNY ESF)

Figure 2.41 (bottom): The Coast Guard garage (CG-2, white building at left), view northeast with the hangar at right, December 2006. The tall structure in the background is a police equipment shed with a temporary training tower built in 2004. (SUNY ESF)

Coast Guard in 1973. The building has a three-story central section with balconies and flanking one-story wings (fig. 2.42).

At the north end of the concrete bulkhead along Jamaica Bay is a wood pier built between 1960 and 1965, with a small boathouse added in 1969. South of this,

beyond piles remaining from a pier built in c.1943, is a small ammunitions locker (South Pyro Locker, CG-7) built in 1955. South of this is the concrete seaplane ramp and helicopter landing pad, a c.1955 reconstruction of a wooden ramp built in 1937.



NORTH 40 NATURAL AREA

The North 40 Natural Area, encompassing the World War II-era ammunitions-communication area as well as adjoining areas of the airfield, is a largely wooded section that the park manages for hiking and nature observation. The vegetation is mostly young successional woods and scrub, with some old-field meadow. The shoreline along Mill Basin is natural beach, although much of it is littered with broken concrete and asphalt that may have been placed for erosion control (fig. 2.43). Entrance to the area is from a trailhead at the middle of runway 6-24 (fig. 2.44). The trail network follows sections laid out by the park after 1974, and the patrol road built during World War II (fig. 2.45). The trails are maintained as mown grass; the park removed or covered the asphalt surface of the road.



Along the trails, visitors encounter some of the World War II-era buildings, but most are concealed



Figure 2.42 (top): Edwards Hall (CG-3), a former Coast Guard barracks built in 1973, view east from the lawn area north of the hangar, December 2006. (SUNY ESF.)

Figure 2.43 (middle): The Mill Basin shoreline along the North 40 Natural Area, view east toward Jamaica Bay, December 2006. (SUNY ESF.)

Figure 2.44 (bottom): The trailhead to the North Forty Natural Area looking north from runway 6-24, December 2006. The trail here was laid out by the park in c.1980. (SUNY ESF.)

by heavy vegetation.⁴ This military development is within an area defined by the flight-path clear zones for runways 1-19, 6-24, and 15-33 (later taxiway 10). At the north end of the area near Mill Basin is the inert storage building (106), a large concrete warehouse with loading docks that is graffiti-covered and in a state of ruin. Farther west off a spur from the patrol road is the former practice bomb

storage building (109), a sheet-metal sheathed building that the park presently uses for storage (fig. 2.46). North of this building may be foundations from four World War II radio towers and the eleven towers that replaced them by c.1955, but the area is concealed by vegetation. The remainder of the buildings to the west (110-115), all of which are accessed off the patrol road, are abandoned World War II-era ammunitions magazines. Most are built of heavy reinforced poured concrete with underground components used for storing high explosives, fuses, and detonators. Building 112, for example, features an arched submerged high-explosives storage chamber that is accessed by a depressed entryway (fig. 2.47). The other six magazines are concealed by heavy vegetation.

SOUTH ADMINISTRATIVE AREA

To the south of the airfield is a large area containing approximately twenty-two buildings that are remnants of the main and west barracks areas of the naval air station. Prior to development of the airport and naval air station, this was part of Barren Island,



Figure 2.45 (top): The World War II-era patrol road through the North 40 Natural Area, looking west from near runway 1-19, December 2006. The park has removed the pavement further to the west as part of the North 40 trail system. (SUNY ESF.)

Figure 2.46 (middle): The former practice bomb storage building (109), view north, December 2006. Four radio towers once stood in the vicinity of this building during World War II. (SUNY ESF.)

Figure 2.47 (bottom): One of the high-explosive magazines (112) in the North 40 Natural Area, looking north through the depressed entry area, November 2005. The arched-roof underground chamber is entered through the steel door. (SUNY ESF.)

an industrial community dating to the mid-nineteenth century that reached a height of nearly 1,500 residents in the 1910s. The southern part of the South Administrative Area along Rockaway Inlet, containing most of a marginal wharf and a seaplane base dating to World War II, are today within property belonging to the Department of Defense that is used as a Marine Corps Reserve Center. Taxiway 7, which linked the airfield with the seaplane base, extends south between the main and west barracks area. The park has retrofitted the taxiway in part as the entrance road to Hangar Row and as a model car track with berms closing off access from Floyd Bennett Boulevard.

The South Administrative Area is characterized overall by asphalt roads, parking lots, concrete sidewalks, frame and brick buildings, building foundations, mown grass, overgrown shrubs, and deciduous woods that have grown up on formerly open land. Many of the buildings are vacant and some are falling into ruins. Located here are park administrative offices, park police headquarters, facilities used by various park partners, and the main public entrance to Floyd Bennett Field from Flatbush Avenue, a divided roadway with a gatehouse that the Navy

built in c.1951 (fig. 2.48). Floyd Bennett Boulevard, built in c.1942, runs east-west through the center of the South Administrative Area from the main entrance (fig. 2.49). The road is flanked by a series of side roads with concrete sidewalks, most dating to World War II. Extending off the south side of Floyd Bennett Boulevard is a gated road that leads to the Marine Corps Reserve Center. The chain-link fence-enclosed property has a guard booth at the entrance and a large main building constructed in 1975 (fig. 2.50).

The core of the South Administrative Area is the former west barracks area, located between the flight-path clear zones for runways 15-33, 1-19, and 12-30 that defined a triangular-shaped area of development. Due to extensive loss of buildings and growth of woods on formerly open land, this development



Figure 2.48 (top): The main entrance to Floyd Bennett Field looking east from Flatbush Avenue, May 2008. In the distance is the Korean War-era visitor contact station (135) and sentry booth (207). (SUNY ESF.)

Figure 2.49 (bottom): Floyd Bennett Boulevard, the main road through the South Administrative Area, looking east toward the main barracks area, May 2006. (SUNY ESF.)

pattern is no longer discernable. Buildings dating to World War II are mostly temporary frame construction, while newer buildings are brick and steel. Most buildings retain their original form but have been altered through replacement siding and windows, or through extensive deterioration.



Within the main barracks area were three distinct barracks complexes. The Ecology Village gym (70) is a remnant of the northernmost complex adjoining the airfield that was built during World War II (fig. 2.51). This building, originally the West Recreation Building, was flanked by two barracks to either side that were removed in c.1948. On the site of one of the barracks is a park maintenance garage (259), a concrete building that the Navy constructed in c.1952 during the Korean War as a garage and fire station (fig. 2.52). South of these buildings are remnants of a large World War II-era enlisted men's barracks complex that consisted of seven barracks connected by breezeways to a central mess hall. Remaining from this complex are the foundations of the central mess hall (67) that burned in c.1969, and the Gateway Jamaica Bay Unit headquarters building (69), one of the former barracks that was converted to offices by the Navy in c.1946 (fig. 2.53). Two other barracks (62, 72) remain standing, but have been vacant for many years and are deteriorating (fig. 2.54). The park police headquarters building (275) is located south of building 69 (fig. 2.55). This one-story brick



Figure 2.50 (top): The entrance to the Department of Defense property (Marine Corps Reserve Center) looking south from Floyd Bennett Boulevard, May 2008. In the background is the main building constructed in 1975. (SUNY ESF.)

Figure 2.51 (middle): The front of the World War II-era Ecology Village gym (70) looking north, December 2006. In the background is the pine plantation within the Ecology Village campgrounds, and to the right are a park pavilion and comfort station. (SUNY ESF.)



Figure 2.52 (bottom): The Korean War-era park maintenance garage (258), view looking north, May 2008. In the background is the pine plantation within the Ecology Village campgrounds. (SUNY ESF.)

and window-wall building was originally a Navy dispensary built in c.1968. The adjoining lawn area that fronted the barracks complex to the south is crossed by asphalt drives and concrete pads remaining from a mobile home park developed in c.1970. The Navy probably planted the existing specimen trees within this area at that time.



East of the enlisted men's barracks across Enterprise Road is the vacant Job Corps gym (174), built during World War II as the enlisted men's recreation building. It features a barrel-vaulted gymnasium wing and a two-story barracks-type wing at the front that may have been added after the war (fig. 2.56). To the north of the gym is a large vacant barracks complex (129-132) built in 1952 during the Korean War and most recently used by the Job Corps program. This red-brick complex consists of two, two-story barracks, a heating plant, and a one-story mess hall connected by a breezeway (fig. 2.57). The complex is surrounded by overgrown foundation plantings and peripheral picnic areas and parking lots enclosed by brick and masonry-block fences.



On the south side of Floyd Bennett Boulevard adjacent to the Department of Defense property are two single-family houses (156, 157) that were built during World War II as married officers' quarters (fig. 2.58). The houses, which are vacant and concealed by overgrown plantings that probably



Figure 2.53 (top): The park headquarters building (69), a former World War II barracks, view east, May 2008. The Navy converted this building to its headquarters in c.1946, at which time it added the flagpole. (SUNY ESF.)

Figure 2.54 (middle): Building 62 (left) and 72, two of three buildings remaining from the World War II-era Enlisted Men's Barracks, view south, December 2006. Most of the window glass on these vacant buildings is missing. The breezeway in the right distance once connected to the central mess hall, of which only the foundations remain. (SUNY ESF.)

Figure 2.55 (bottom): The park police headquarters (275), a Navy dispensary built in c.1968, view southeast, December 2006. (SUNY ESF.)

date to after World War II, face a central lawn area bordered by a circular drive named Independence Lane. To the east of the houses is a ballfield that was the site of the Married Officers' Mess Hall (73), which was demolished in the 1980s. To the south along Enterprise Road is a row of three single-family houses (268-270) constructed in c.1960 as married officers' quarters (fig. 2.59). The park manages

these small ranch-style houses as staff residences based on a lease agreement with the Department of Defense, on whose property they are located (they are north of the fence that forms the management boundary between the two federal properties).

East of Enterprise Road is a large ballfield on the site of the World War II-era Bachelor Officers' Quarters (68), which was the largest building in the main barracks area prior to its demolition in the 1980s. On the east side of the ballfield is a three-story brick and window-wall school building (272) erected in c.1968 for the New York City Board of Education and presently occupied by the Gateway Environmental Study Center (fig. 2.60). The adjoining area to the east and south at the southeastern tip of Floyd Bennett Field is a mix of park recreation areas and abandoned buildings. This was a former industrial section of the main barracks area where supplies were transported from ships docked at the marginal wharf along Rockaway Inlet. The Environmental Study Center is next to the site of a World War II-era dispensary (87) where supplies were stored and distributed. On the site



Figure 2.56 (top): The vacant Job Corps gym (74), the World War II-era Recreation Building, view of the rear looking northwest, December 2006. The building consists of a barrel-vaulted gymnasium and a two-story attached barracks-type wing (at left). In the right background are the Korean War-era barracks. (SUNY ESF.)

Figure 2.57 (middle): Looking east into the vacant Korean War-era brick barracks complex (129-132), December 2006. (SUNY ESF.)

Figure 2.58 (bottom): Two vacant single-family houses (157, 158), formerly Married Officer Quarters built during World War II, view looking southeast across the circular entrance drive (Independence Lane), May 2008. (SUNY ESF.)

of this building is the park nursery, a fenced-in area developed in the 1980s (fig. 2.61). The nursery contains ornamental plantings, a fiberglass-sheathed wood-frame greenhouse, storage sheds, piles of mulch, and a small parking area. To the east is a park archery range and successional woods within the former clear zone of runway 12-30.



Southeast of the nursery and Environmental Study Center adjoining the marginal wharf are vacant buildings, including the laundry (85) and Power Plant A (86) that have collapsed roofs (fig. 2.62). Between these buildings and the marginal wharf are abandoned World War II concrete water storage tanks (179, 180) and a water pump house. In this area are also foundation remnants of World War II and Korean War-era fuel tanks concealed by woods and vines. One of the associated substation buildings (101) remains standing to the rear of the power plant. The marginal wharf itself is in ruins due to erosion from the strong currents of Rockaway Inlet that have washed away the fill and roadway from behind the steel sheet-pile bulkhead (fig. 2.63). The entire wharf is on Department of Defense property, but the eastern third falls in the area managed by the park.

At the opposite or west side of the South Administrative Area is the west barracks area,

Figure 2.59 (top): Three former Married Officer Quarters (268-270, at left) built in c.1960, view north, December 2006. These ranch houses are a park inholding within Department of Defense property. The open area at right is a ballfield that was site of the Bachelor Officers' Quarters, once the largest building in the main barracks area. (SUNY ESF.)

Figure 2.60 (middle): The Gateway Environmental Education Center (274) erected in c.1968 as a city school, view southeast from Floyd Bennett Boulevard toward the marginal wharf, May 2008. In the background is the World War II-era laundry (85). (SUNY ESF.)

Figure 2.61 (bottom): View south through the park nursery showing the greenhouse at left and ornamental plantings, December 2006. The concrete sidewalks are probably remnants of a World War II-era dispensary that stood on the site. (SUNY ESF.)



originally developed during World War II west of the flight-path clear zone for runway 15-33 (later taxiway 10/present park entrance road). The west barracks area consists of several scattered buildings along Aviation Road, which originally ran south from Hangar Row but now terminates at Floyd Bennett Boulevard. At the north end of Aviation Road is a public parking lot built in c.1996 adjacent to the main gate. On the west side of the road is staff housing (267) in what may be a relocated World War II-era barracks (fig. 2.64). Farther south on the east side of Aviation Road is an abandoned Navy pump house built in c.1952, and across the road is the former sewage and garbage disposal area originally developed during World War II (fig. 2.65). The road turns east along Rockaway Inlet, where the adjoining sandy beach is used as a restricted fishing area. The Navy developed the land to the north, now successional woods and concrete pads, as mobile home courts in c.1965.

Figure 2.62 (top): The vacant World War II-era laundry (85, right) and Power Plant A (87), view east, May 2008. The roofs on both buildings have collapsed. (SUNY ESF.)

Figure 2.63 (upper middle): The ruins of the marginal wharf looking east toward the National Park Service-managed section, December 2006. The building at left is on Department of Defense property. (SUNY ESF.)

Figure 2.64 (lower middle): Looking south into the former west barracks area along Aviation Road showing staff housing (267), probably a relocated World War II-era barracks, May 2008. (SUNY ESF.)

Figure 2.65 (bottom): The abandoned Navy sewage plant (60), view west from Aviation Road, December 2006. The building in the background is part of the Gil Hodges Memorial Bridge toll plaza. (SUNY ESF.)

ENDNOTES

- 1 Robert Page, Cathy Gilbert, and Susan Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (Washington D.C.: U.S. Department of the Interior, National Park Service, Cultural Resource and Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998), 75.
- 2 The park's map, "Floyd Bennett Field Land Assignments (Draft Version 1.0, 17 December 2007) indicates the Federal Aviation Administration has an easement for the Doppler radar tower, but the following court case indicates the 1.8-acre property is under separate federal ownership: NYC Audubon Society vs. Rodney Slater, U.S. Court of Appeals docket 99-4081, <http://caselaw.lp.findlaw.com/scripts/getcase.pl?navby=search&case=/data2/circs/2nd/994081.html>.
- 3 John Lincoln Hallowel, Park Ranger, Gateway National Recreation Area, personal communication with author, November 2005.
- 4 Due to the dense vegetation, it was not possible to inventory all features within the North 40 Natural Area.

Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

Existing Conditions 2008



National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

1. Aerial photograph, 2007
2. NPS, Structures Key Map, Floyd Bennett Field, 1983
3. Field inspections, 2006-2008
4. FBF Land Assignments, Draft 1.0, 2007

DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

LEGEND

	Property boundary
	Lease/assigned area boundary
	Building/structure, inventory number
	Paved circulation
	Unpaved circulation
	Piles
	Fence, light
	Woods, specimen tree
	Berm, mulched pavement
	Lawn or managed grassland
	Upland, low scrub
	Marsh
	Open water

NOTES

1. All features shown in approximate scale and location.
2. Vegetation species unknown except where indicated.
3. See Appendix D for building key.
4. Plan does not show minor park structures (sheds, shelters, tent platforms, etc.) and furniture (benches, picnic tables).
5. Plan does not show all paving and building remnants.
6. White mask indicates landscape outside of project area.

Drawing 2.1



Gateway National Recreation Area
Brooklyn, New York

NATIONAL
PARK
SERVICE

OLMSTED
CENTER
for LANDSCAPE PRESERVATION

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

1. Aerial photograph, 2007
2. NPS, Structures Key Map, Floyd Bennett Field, 1983
3. Field inspections, 2006-2008
4. F8F Land Assignments, Draft 1.0, 2007

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	Property boundary
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5. Plan does not show all paving and building remnants.
6. White mask indicates landscape outside of project area.

Character Areas Legend

- Hangar Row
- Airport Entrance
- Airfield
- Naval Aviation Patrol Base
- U.S. Coast Guard Air Station

Area North of Airfield North Forty Natural Area

Area South of Airfield South Administrative Area



3. ANALYSIS AND EVALUATION

This chapter provides an evaluation of the significance and historic character of the Floyd Bennett Field landscape based on the findings of the preceding site history and the existing conditions. The chapter evaluates the entire Floyd Bennett Field landscape east of Flatbush Avenue and south of Shore Parkway, excluding the Department of Defense (Marine Corps Reserves) property at the south side of the field along Rockaway Inlet, which is under separate federal jurisdiction, and a small parcel belonging to the U.S. Department of Transportation (Doppler radar tower).

The chapter is divided into two main sections. The first provides an evaluation of the historic significance of Floyd Bennett Field according to the *National Register Criteria for Evaluation*, and makes recommendations for updating the boundaries and period of significance for the existing National Register-listed Floyd Bennett Field historic district. While this evaluation pertains to the landscape, the landscape includes most resources on the property. This report does not, however, evaluate architectural significance of individual buildings under National Register Criterion C, or archeological significance under Criterion D. Additional research and evaluation would be required to fully document all areas of historic significance for all resources, such as through amended National Register documentation and updates to the park's List of Classified Structures (LCS) and Archeological Sites Management Information System (ASMIS).

The second main section of this chapter is an evaluation of the landscape's historic character according to National Park Service cultural landscape methodology outlined in *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (National Park Service, 1998). Part A of this section provides a detailed feature-level evaluation of the landscape's historic character within the updated historic district boundaries. Part B provides a summary characteristic-level evaluation of the landscape characteristics outside of the historic district, corresponding to most of the North 40 Natural Area and the South Administrative Area. Features are not individually evaluated in these two areas.

All landscape features are keyed to the Analysis and Evaluation Plan (Drawing 3.1). The characteristics evaluations include illustrations that compare historic and existing conditions to give a sense of change over time. Further graphic documentation of characteristics and features is in the Site History and Existing Conditions chapters.

NATIONAL REGISTER EVALUATION

The following recommendations for evaluating the historic significance of the Floyd Bennett Field landscape according to the National Register Criteria build off an evaluation of the existing historic district listed in 1980, which encompasses most of the original municipal airport. In summary, this report recommends that the period of significance be extended to the end of World War II in 1945 and that the district boundaries be expanded to include the entire Airfield character area as well as the Naval Aviation Patrol Base and the Coast Guard Air Station areas along Jamaica Bay. Areas outside the Airfield—the North 40 Natural Area and the South Administrative Area—are not recommended for inclusion within the expanded district due to a lack of integrity in the landscape. Further evaluation is necessary to determine if individual resources within these two areas, such as buildings, structures, and archeological sites, may be eligible for National Register listing.

EXISTING NATIONAL REGISTER DOCUMENTATION

Floyd Bennett Field was listed as a historic district in the National Register of Historic Places on April 11, 1980 based on a nomination form drafted in 1978.¹ The nomination identifies Floyd Bennett Field as being significant in the areas of transportation and military history, with emphasis on transportation during a period of significance from 1931 to 1941. The period begins when the airport was dedicated and officially opened to the public and ends when the city transferred ownership to the Navy. The boundaries of the 1980 district, encompassing 328.5 acres, include most of the original municipal airport, excluding property then belonging to the Navy (NARDET on the south half of the Aviation Patrol Base) and the Coast Guard Air Station Brooklyn that took in part of the airfield (figs. 3.1, 3.2). The National Register boundary corresponds with the former airport south boundary road on the south, a line between taxiways 1 and 2 and runway 6-24 on the north, Flatbush Avenue on the west, and taxiway 6 on the east.

Section 7 of the nomination form organizes the resources into three tiers: primary contributing, secondary contributing, and non-contributing. The primary contributing resources are the Administration Building (1), the eight original paired hangars (3-6), the Hangar Row apron, original runways 15-33 and 6-24 (both later converted to taxiways), and runways 1-19 and 12-30. Portions of runway 1-19 extend beyond the district boundary because its southeastern half was on Coast Guard property at the time of listing. Contributing secondary resources, described as having less importance, include the Dope Shop (26, identified as garage and maintenance shop), sewage pump house (30), and transformer vault (57) in the former airport maintenance area at the south end of Hangar Row; a fire pump house (29) and a World War II-era gasoline pump house (145, incorrectly listed as 177) in the airport entrance area; and a transformer

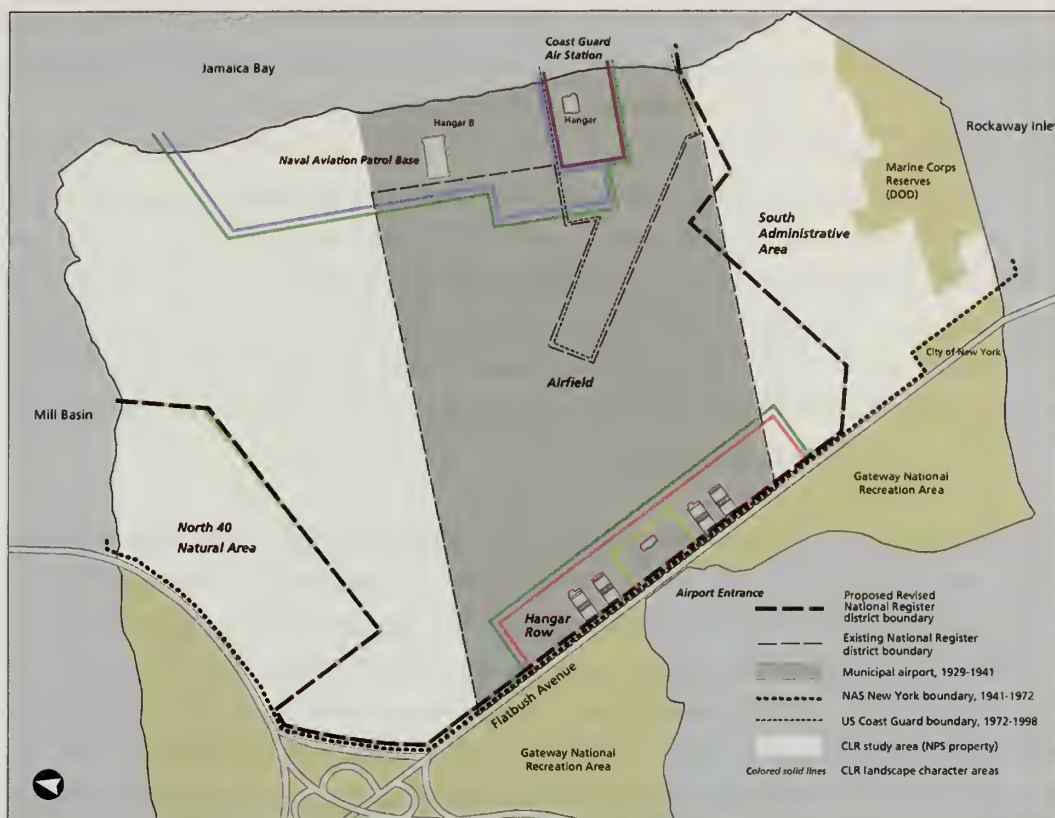
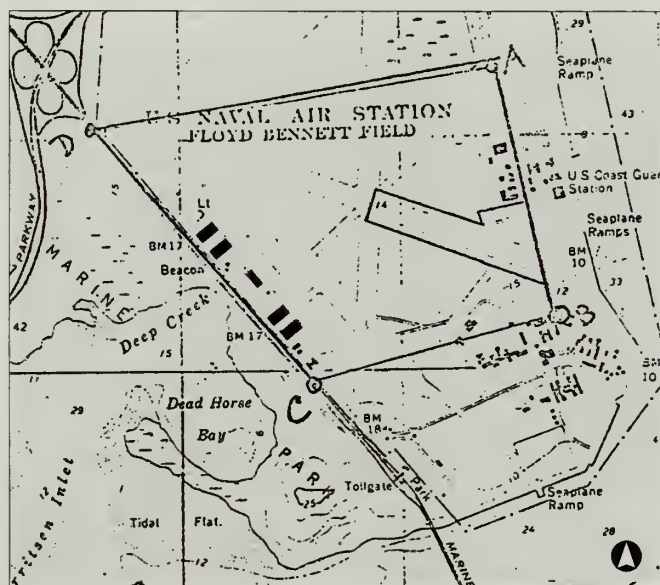


Figure 3.1: Map showing existing and proposed National Register boundaries, and existing and prior ownership within the historic limits of NAS New York. (SUNY ESF.)

Figure 3.2: A map showing boundaries (marked by coordinates A, B, C, and D) from the Floyd Bennett Field Historic District nomination listed in the National Register of Historic Places in 1980. (USGS map, annotated by SUNY ESF.)



building (120) north of hangars 7-8 (6). Since the 1978 draft nomination was written, the park demolished the gasoline pump house (145); its documentation as contributing was an error given its post-1941 construction date.

Non-contributing (post-1941) resources documented in the National Register nomination include the following resources within Hangar Row and the airport

entrance area: two wood-frame hangars 9-10 (46, 51), the Administration Building wing (171), the Navy sick bay (48), beacon tower (176), an Air National Guard sentry booth (236), the nose hangar (265), Navy fire house (50), and several small storage buildings, some of which were ammunitions lockers (44, 45, 238, 266). All of these buildings have been removed since the 1978 draft nomination was written except for the Navy fire house, beacon tower, and one of the ammunitions lockers (44). The maps filed with the National Register documentation indicate that the district boundaries encompassed part of the Navy maintenance area built along the east side of the field in c.1942, but these buildings (93-99) were not described in Section

7 (see fig. 3.2). The district boundary also takes in a small corner of the South Administrative Area (main barracks, including part of the Ecology Village gym, 70), but this is also not described in Section 7.

Section 7 contains a paragraph describing potential prehistoric and historic archeological resources in the South Administrative Area corresponding with what was once Barren Island. While generally accurate, this statement corresponds to an area that is outside of the historic district boundaries and therefore not within the National Register listing. The municipal airport encompassed by the district boundaries was built entirely on fill within a tidal estuary that had been used in part as a garbage dump.

The statement of significance (Section 8) in the existing National Register documentation provides a brief one-page account of the significance of Floyd Bennett Field in the area of transportation. While 'military' is checked off as an area of significance on the header of Section 8, the supporting text provides no justification for this. The statement outlines the property's significance as New York City's first municipal airport designed according to guidelines of the U.S. Department of Commerce. The property is also described as being historically significant for its association with early aviators and its location for experimental and record-breaking flights, including those of Wiley Post, Howard Hughes, and Douglas "Wrong-Way" Corrigan. The statement does not identify National Register Criteria, but the text supports Criteria A and C. Despite its enlargement by the Navy after 1941, the property is described as retaining "architectural design and historic cohesion of an early municipal airport" that "presents an unusual value because it retains much of its original structures and setting which tell the story of the early years of aviation."²

PROPOSED NATIONAL HISTORIC LANDMARK NOMINATION

In August 2005, the National Historic Landmarks Survey staff evaluated a draft nomination for Floyd Bennett Field submitted by Gateway National Recreation Area. The nomination identified Floyd Bennett Field as being nationally significant in the area of air-related transportation under Criteria 1 and 5.³ The nomination lists the period of significance as 1928-1941, beginning with the start of construction on the airport and ending with transfer of the property to the Navy. The boundaries of the nominated district corresponded with the original municipal airport, including the southeast half of runway 12-30 that was excluded from the National Register listing. The Navy's development and use of the property after 1941 was not cited as part of the property's national significance.

In August 2005, the National Historic Landmark Survey staff determined that Floyd Bennett Field (New York City Municipal Airport Number 1) did not have the high integrity required for landmark designation, and therefore rejected the nomination. The staff cited replacement of the control tower windows, the widening and lengthening of the original runways, the addition of a fifth runway, and the construction of a visibly intrusive infill structure built as part of the Aviator Sports and Recreation complex between Hangars 5-6 and 7-8 (5, 6) as having a negative impact on the property's integrity. The staff also expanded upon the nomination and stated that the entire Naval Air Station (NAS) New York property as developed by the Navy through World War II did not retain sufficient integrity for listing as a National Historic Landmark.⁴

Despite not being eligible as a National Historic Landmark, the survey staff determined in an August 2005 letter that Floyd Bennett Field was significant under the National Register Criteria as an important early municipal airport, and as a World War II-era naval air station: "Although Floyd Bennett Field as a whole does not possess the high integrity necessary for National Historic Landmark (NHL) designation, we recommend that an amended National Register nomination for the field be prepared at the national level of significance with a period of significance extending through 1945.⁵ In the same letter, the survey staff also provided an initial eligibility determination for the Coast Guard hanger: "In addition, it appears that the Coast Guard hanger, which seems to be unaltered, may be eligible for individual NHL designation for its association with the development of the helicopter in the 1940s." However, based on a follow-up evaluation in 2008, it was determined that the hangar did not maintain sufficient integrity for NHL designation.⁶

RECOMMENDATIONS FOR AMENDING NATIONAL REGISTER DOCUMENTATION

To more accurately document the historically significant resources of the Floyd Bennett Field landscape, this report recommends that the existing National Register documentation be amended to address changes in ownership since the 1980 listing (addition of the Navy and Coast Guard properties); to fully document the extent of the municipal airport by 1941 to include associated development along Jamaica Bay; and to document the significant role of the Navy in the municipal airport and in the expansion of the airport into NAS New York during World War II. The recommended expanded boundaries include Hangar Row, the entire airfield as expanded during World War II, including the runway approaches and clear zones; and the Naval Aviation Patrol Base and Coast Guard Air Station along Jamaica Bay. The North 40 Natural Area and the South Administrative Area are not recommended for inclusion within the expanded district due to lack of historic integrity (part of the area currently managed as the North 40 along the

runways falls within the historic district boundary). Losses since 1945 within these two areas include eleven barracks, a mess hall, officers' club, dispensary, four radio towers, ten secondary support buildings, and the marginal wharf (presently in ruins). Since 1945, roads, parking lots, and buildings have been added and a large percentage of open land has become wooded.

Recommended Revisions to the Statement of Significance

Future amendment to the National Register listing for Floyd Bennett Field should consider expanding Section 8 to document the significance of the landscape in the areas of transportation and military under Criteria A and C through a period of significance from 1928 to 1945. Gateway National Recreation Area is presently planning to update National Register documentation for all resources within the park including Floyd Bennett Field for its revised General Management Plan currently underway.

The following statements reflect the findings of the site history and existing conditions in this report.⁷ Statements for Criteria A and C are organized by municipal airport (1928-1941) and World War II (1941-1945) periods. These statements build upon the existing documentation that focuses on Criteria A and C in the area of transportation. Each will require further research and elaboration. Because Criterion A in the area of transportation is well covered under the existing National Register documentation and the draft National Historic Landmark nomination, it is not addressed here.

Municipal Airport Period (1928-1941)

Criterion A: Military

Floyd Bennett Field is significant under Criterion A in the area of military history for its association with the U.S. Navy during the formative years of naval aviation.⁸ The Navy had a long-standing presence at Floyd Bennett Field during its use as a municipal airport, a legacy of the post-World War I period that witnessed curtailment of military development and growth of commercial aviation. During this time, the American public was weary of military spending while many municipalities faced large expenses in building public airports. By working together, municipalities and the military were able to share resources. The military presence also helped to ease public perceptions about the military while providing a comforting presence to those fearful of flying. The relationship that developed between the military and commercial airports was therefore important not only financially, but from a social perspective as well.⁹

As a result of these developments, the Navy established most of its air stations at municipal airports during the 1930s. As late as 1938, the Naval Aviation

Department had only seven of its own air stations.¹⁰ The Navy was present at Floyd Bennett Field from the beginning, occupying Hangar 1 just one week after the airport's dedication in May 1931, having relocated from the nearby Rockaway Naval Air Station. The city granted the Navy full use of the airfield for its training purposes, which soon expanded into Hangar 5. The Navy was one of the city's biggest tenants at the airport, and as the country began to prepare for potential war in the late 1930s, its presence increased substantially. With declaration of the limited national emergency in 1939, the Navy leased property from the city on the east side of the airfield along Jamaica Bay for the development of its own aviation patrol base (Hangar A) completed in 1940. At the south end of Hangar Row, the Navy began construction of a Naval Air Reserve Training Base that included a barracks (27) completed in early 1941, with several additional buildings (50-55) completed soon after the closing of the municipal airport in May of that year.

The presence of the Coast Guard at Floyd Bennett Field also reflected the partnership of municipalities with military agencies during this period. While a quasi-military agency under the U.S. Department of the Treasury, the Coast Guard performed similar functions, including search and rescue missions, patrolling, and training. The first Coast Guard air station in the country was commissioned at Cape May, New Jersey in 1926. The creation of the Brooklyn air station, built on land leased from the city, was part of an expansion of the air station system that began in 1934. By 1936 when construction of the Brooklyn facility began, there were just six operational Coast Guard air stations in the nation. The new base, named the U.S. Coast Guard Air Station Brooklyn, was intended both as a central base of operations for the eastern seaboard and as a regional base responsible for regulating air and sea traffic between existing air stations at Cape May and Salem, Massachusetts. The station included a hangar, garage, taxiway, and seaplane ramp completed in 1937.

Criterion C: Transportation

The existing National Register listing already documents Floyd Bennett Field as being significant under Criterion C in the area of transportation as a rare-surviving example of an early municipal airport. However, the information relating to this criterion warrants substantial elaboration. The documentation should include expanded discussion of the layout and construction of the runways; the architecture of the hangars and Administration Building and their relationship to Flatbush Avenue and the runways; the construction of the landmass and turf surface of the airfield; and the siting and design of seaplane facilities as illustrated in existing resources.

The airport entrance off Flatbush Avenue, built between c.1931 and 1935, also warrants its own discussion as an example of landscape design used to comfort

hesitant air travelers, a function similar to the city's intent for the familiar neoclassical-style Administration Building. The planes and boarding area were concealed to the rear of the Administration Building. The diagonal entry drives, central lawn area with rustic and cast-iron light standards, sycamore trees, clipped hedges, and rustic wood sign imparted a park-like character to the entrance area that visitors would have found familiar. The landscape was much like the landscape of the state and city parks and parkways under development at the time, including the nearby Shore Parkway and Jacob Riis Park. The entrance area landscape also tied into the landscape of Flatbush Avenue, which was rebuilt into a dual-carriageway parkway lined by sycamore trees following the opening of the Marine Parkway Bridge in 1937.

The Coast Guard Air Station Brooklyn also warrants discussion of its own significance under Criterion C as part of the development of the larger airport with its similar facilities, including a hangar, taxiway, and seaplane ramp. Because it was developed within a different context, the architectural style of the Coast Guard buildings contrasted with those of the municipal airport at Hangar Row. The use of the white-painted streamlined Moderne style (also called Art Moderne) at Floyd Bennett Field, a style that often employed nautical elements, was most likely meant to evoke the maritime association of the Coast Guard. Further research is needed to establish a stylistic context for Coast Guard facilities of the period.

Municipal Airport Period Integrity Overview

Within the proposed expanded historic district, key resources remaining from the municipal airport period within Hangar Row include the four paired hangars (3-6), Administration Building (1), pump house (29), and Dope Shop (26), along with the parts of the apron, diagonal entry drives, lawn, flagstaff, and airport sign (reconstructed). Resources lost from this period within Hangar Row include the field house (2) and four maintenance buildings at the south end of Hangar Row; the open space between hangars 5-6 and 7-8 (Aviator Sports infill building), the gate/passenger boarding area and rotating platforms on the apron (replaced by parking lots); and rustic and cast-iron light standards and parking lots within the entrance area. Within the airfield, resources remaining from this period include runways 6-24 (taxiway 1-2), 15-33 (taxiway 10, current entrance road), 12-30, and 1-19; portions of the open turf airfield; and remnants of the south boundary road that led to the seaplane base along Jamaica Bay. Resources lost within the airfield include two Sperry floodlight towers, system of boundary and runway lights, and a seaplane ramp and pier on Jamaica Bay. Within the Coast Guard Air Station, key resources remaining from this period include the hangar (CG-1) and garage (CG-2). The station retains a seaplane ramp, although it is a c.1955 reconstruction of the original built in 1937.

World War II Period (1941–1945)*Criterion A: Military*

Floyd Bennett Field, designated as Naval Air Station (NAS) New York on June 2, 1941, is significant under Criterion A in the area of military history for its role in the American home front of World War II. NAS New York became one of the most important naval air stations in the country, reflecting the increasing importance of aviation in the Navy. In 1938, the Navy maintained just seven Naval Air Stations—the flagship type of naval air facility—and ten Naval Aviation Reserve Bases, including the one at Floyd Bennett Field. During the war, these numbers rose to 257 Naval Air Stations, of which eighty-six were in the East, along with many smaller satellite fields. NAS New York served as the main air station for the New York City area, with the primary Navy installation at the New York Navy Yard located on the East River in Brooklyn. The largest naval air station in the East was NAS Quonset Point, Rhode Island, a facility built between 1940 and 1941.

NAS New York was home to several aviation units of the Atlantic Fleet, three submarine patrols squadrons, a scout observation service unit, two Naval Air Transport Service squadrons, and the Aircraft Delivery Unit (later Naval Air Ferry Command), which was headquartered at Floyd Bennett Field. NAS New York also served as the eastern terminal for the delivery unit in large part because of its proximity to major military aircraft production plants. By the end of the war, some 46,000 aircraft had been commissioned at NAS New York and then delivered to fight in the major battles, primarily in the Pacific. The location of NAS New York in the country's largest city, with access to key commercial areas and ample labor pools, also led to the field's designation as a base for servicing allied aircraft and shipping supplies to both the European and Pacific fronts. In its role as the eastern terminal of the Military Air Transport Service, the field handled on average 720 transcontinental flights a month involving more than 5,000 passengers and more than a million pounds of cargo. During the war, NAS New York also continued and expanded its role as a major base for training pilots and for patrolling the Atlantic sea-lanes, with the Naval Aviation Patrol Base on Jamaica Bay increased to six patrol squadrons and one inshore patrol squadron.

These war-time operations required an enormous increase in Navy personnel. At the time of its commissioning in 1941, there were just six officers and twenty-four enlisted men at NAS New York. After Pearl Harbor, work began on developing facilities to accommodate 6,500 personnel. By 1944, there were 897 officers, 3,101 enlisted personnel, and 740 civilians at NAS New York, including detachments of Women Accepted into Volunteer Service (WAVES).

Criterion C: Military

Floyd Bennett Field is significant under National Register Criterion C as a representative example of a World War II-era naval air station developed from a municipal (civilian) airport. Forty-three of the eighty-six naval aviation bases in the eastern United States during World War II were located at former municipal airports and thus it was characteristic for them to incorporate both civilian and military aspects.

The Navy's plans for the expansion of Floyd Bennett Field were typical of its war-time development elsewhere across the nation that employed standardized plans based on availability of resources and limitations of the local climate. The principal ground facilities of waterside naval air stations remained largely the same as they were prior to the war. These included seaplane ramps, seaplane parking areas, seaplane hangars, wharfs, landplane hangars, landplane runways, and personnel buildings, including barracks, recreational halls, and dispensaries. The sites for naval air stations required a limited amount of landplane facilities alongside a protected body of water where seaplanes could take off and land under a variety of weather conditions. Characteristic of most airfields, all major buildings and above-ground structures in naval air stations were located outside of flight-path clear zones, areas in which obstructions to flight such as buildings, towers, and trees were prohibited. One change in facilities during the war resulted from advances in aircraft, which became faster and larger. These craft required longer, more stable runways.

The Navy's war-time plans for buildings, structures, circulation, and other infrastructure were designed for quick and efficient construction. War-time building construction fell into two general types: permanent, intended for continued use after the war and usually employing masonry and steel; and temporary, not intended for use after the war and usually built of wood frame and modular construction. The Navy's new construction at Floyd Bennett Field was characterized overall by utilitarian design and construction without any of the architectural adornment that the city and Coast Guard had earlier employed. Asphalt was used instead of concrete on most of the runways and taxiways, and buildings were primarily frame, with clapboard or sheet-metal siding. Most non-developed areas that the Navy created from fill, such as on Barren Island and the area north of the original airport, were apparently left bare and allowed to regenerate naturally instead of being surfaced in topsoil and planted in turf. The land boundaries of the site were cordoned off by economical cyclone and barbed-wire fence. Less than twenty-two months after the Navy's acquisition of Floyd Bennett Field, its expansion into NAS New York was largely complete.

The Navy's development of Floyd Bennett Field was concentrated in five main areas: additions and modifications to Hangar Row including hangars and barracks; expansion of the airfield including a circumferential taxiway system and a new runway; enlargement of the Aviation Patrol Base with a second hangar and construction of an adjoining maintenance area; construction of ammunitions magazines and radio towers north of the airfield; and redevelopment of Barren Island into a main barracks area, west barracks area, seaplane base, and marginal wharf. New buildings and other above-ground structures were developed outside of flight paths, which were defined by clear zones 650 feet to either side of each runway and additional areas on the approaches. Given its limited acreage, the Coast Guard made relatively minor additions to its air station at Floyd Bennett Field during the war aside from construction of a barracks.

World War II-Period Integrity Overview

Within the proposed expanded historic district, key resources remaining from the World War II-era at Hangar Row include the four paired hangars (3-6), Administration Building (1), pump house (29), Dope Shop (26), fire house (50), Synthetic Training Building/barracks (54), and several small utility buildings (30, 57, 126), along with diagonal entry drives and parts of the apron, although covered by later parking lots and drives. The control tower remains as altered by the Navy during the war. Most of the buildings added to Hangar Row during the war were removed between 1979 and 2000, notably two wood-frame hangars (46, 51), paint store house (47), sick bay (48), and the Administration Building wing (171). Several buildings at the south end of Hangar Row including barracks and utility buildings (27, 28, 52, 53, 56, 58) were removed by the Navy prior to 1972. Key resources added within the airfield include new and expanded runways, the perimeter taxiway system, and a compass rose. War-time resources lost from the airfield include portions of the open airfield due to natural succession (a reversible condition), two Sperry flood-light towers, a rocking platform (a practice facility; there was also a tetrahedron, but it is not known if this still exists within the wooded area of the airfield); and along Jamaica Bay, the boat basin pier, municipal airport seaplane pier and ramp, two ball fields, and several small buildings (35, 41, 125). Within the Naval Aviation Patrol Base, existing war-time resources include Hangar B (100), seaplane ramp B, the enlarged apron, and the maintenance area buildings (89-99). Resources lost from this area include Hangar A (23), two frame barracks (24, 38) that were replaced by Tylunas Hall (278), and several small maintenance-storage buildings (92, 93, 95). Within the Coast Guard Air Station, war-time resources include the hangar (CG-1), garage (CG-2), taxiway, and seaplane ramp (rebuilt c.1955); features lost are limited to a pier, two storage buildings (CG-4, 6), and barracks (CG-3).

Period of Significance

In keeping with the recommendation of the National Historic Landmark program, the period of significance should begin when construction began in 1928, rather than when the airport was dedicated in 1931 and extend through the end of World War II in 1945.

The post-World War II period at Floyd Bennett Field, from 1945 to 1971 when NAS New York was decommissioned, does not appear to fall within the period of significance because of a lack of significant military use under Criterion A, and a lack of significant military design and construction under Criterion C. In July 1946, NAS New York was redesignated as a Naval Air Reserve Training Station, and would remain primarily a training facility for Navy and Marine Reserves over the next twenty-five years. The Coast Guard Air Station, which the Navy returned to the jurisdiction of the Treasury Department in c.1946, also served as a training facility. The field did undergo a brief reinvigoration in the early 1950s to support the Korean War, but military activity returned primarily to training functions after the end of the war.

Because its training operations did not require the extensive World War II-era infrastructure, the Navy leased large portions of the field to other agencies, concentrating its training facilities in the main barracks area and the Aviation Patrol Base. The Navy even considered transferring the airfield back to the city for use as a commercial airport in the late 1940s, but an agreement was never reached. Nonetheless, the negotiations reflected the extent to which the significance of Floyd Bennett Field had declined within a military context. The Navy leased two hangars in Hangar Row to the New York City Police Aviation Bureau between 1946 and 1971 (the police has been there prior to the war as well), and the remainder of Hangar Row to the New York Air National Guard between 1956 and 1971. At the west barracks area, the Navy allowed the State of New York Housing Authority to use the site between c.1948 and 1955. The Department of Defense also carved out the southern half of the South Administrative Area along Rockaway Inlet for an Armed Forces Reserve Center through a lease granted by the Navy in 1952.

The physical development of the Floyd Bennett Field landscape after World War II reflects the decline in the military significance. Changes to the landscape during this period were few and the Navy largely retained the earlier World War II and municipal airport patterns of development. In the late 1940s, the Navy removed eight barracks in the main barracks area and the State of New York developed housing in the west barracks area. Changes during the Korean War in the early 1950s included new radio towers in the North 40 Natural Area, extension of the runway approaches, expansion of the Aviation Patrol Base apron, construction

of a brick barracks complex in the main barracks area, and a new entrance off Flatbush Avenue. During the Vietnam War, the New York Air National Guard built a nose hangar in Hangar Row, and the Navy replaced the World War II-era barracks in the Naval Aviation Patrol Base with a new building (Tylunas Hall) and removed several buildings south of Hangar Row. Within the main and west barracks areas, the Navy built a new dispensary (present park police headquarters), a school building for the New York City Board of Education, and two mobile home courts, probably for reservists. Overall from a district perspective, these changes do not reflect a particular period or type of military development in the post World War II period of NAS New York under Criterion C.

Boundaries ¹¹

Based on the changes the Navy made to the landscape during World War II and the existing level of integrity, the National Register historic district boundaries should be expanded to include all of the airfield, the Naval Aviation Patrol Base including the adjoining maintenance area, and the original ten-acre property of the Coast Guard Air Station (see fig. 3.1).¹² A small part of the existing National Register historic district that falls within the South Administrative Area (area including Ecology Village gym, #70) would be excluded from the expanded district. The separate federal property around the Doppler radar tower (Federal Aviation Administration/Department of Transportation) should be included but as a non-contributing resource to avoid a so-called doughnut hole, given its location within the proposed district.

The expanded boundaries of the airfield correspond as closely as possible with the historic flight-path clear zones. The boundary is adjusted back from the clear zones where later development or lack of integrity warrant. The growth of successional woods on formerly open field is a reversible condition and not a reason for excluding parts of the airfield. All resources and associated landscape features within the proposed expanded historic district are contributing if they were constructed between 1928 and 1945 and retain integrity from the period of significance. Resources constructed after the end of the historic period, such as Tylunas Hall (278) in the Naval Aviation Patrol Base, are non-contributing.

Further Research

To amend the existing National Register listing, further research and documentation will be required to evaluate all resources and areas of significance. Further research may be needed under Criterion A to more fully develop the military contexts associated with NAS New York during World War II, the role of the Coast Guard and Navy in the development of the helicopter, and the role

of the Coast Guard Air Station during the Cold War (limited documentation was found on the post-1945 operation of the air station). As noted previously, this report does not address potential significance in the areas of architecture, engineering, and archeology because of the project scope limited to the landscape. Based on available documentation, it does not appear that this additional research would alter the proposed historic district boundaries or period of significance with the possible exception of the period of significance for the Coast Guard Air Station in the Cold War and possible expansion of the boundaries to include the North 40 Natural Area (former Navy ammunitions-communication area). If future evaluation of the high-explosive magazines (110-115) identifies significance in the area of engineering and architecture, then this area may warrant incorporation into the district. These magazines were not inventoried for this report due to lack of access from dense vegetation.

NATIONAL REGISTER INTEGRITY EVALUATION

According to the National Register, integrity is the ability of a property to convey its significance through physical resources. The National Register program identifies seven aspects of integrity: location, design, setting, material, workmanship, feeling, and association.¹³ Retention of these qualities is necessary for a property to convey its significance; however, not all seven must be present for a property to retain integrity overall. A basic test of integrity is whether a participant in the historic period—in this case, perhaps a former Naval officer who served at NAS New York during World War II—would recognize the property as it exists today. The following section evaluates each of the seven aspects of integrity within the proposed expanded National Register district to its condition at the end of the proposed period of significance in 1945. Overall, the expanded Floyd Bennett Field historic district retains integrity of location, design, setting, materials, workmanship, and association, but has lost integrity of feeling. This evaluation does not consider integrity of interior spaces, archeological sites, or other resources that do not shape the character of the landscape.

Integrity of the landscape outside of the historic district within the North 40 Natural Area and the South Administrative Area is addressed in the second section of this chapter (Landscape Evaluation)

Location

Location refers to the place where the cultural landscape was constructed or where the historic event occurred. All land and associated features within the proposed district boundaries were historically part of Floyd Bennett Field in 1945.

The historic district encompasses only part of the land associated with NAS New York.

Evaluation: Retains integrity of location.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a cultural landscape. Overall, spatial relationships, circulation patterns, and building clusters remain intact from the end of World War II. Substantial changes in design of the entrance area landscape since 1945 include addition of a chiller building (Aviator Sports) and fencing, removal of the Administration Building wing (171), Navy sick bay (48) field house (2), and parking lots that have altered the historic spatial character. In Hangar Row, the addition of the large infill building (Aviator Sports) and construction of parking lots and entrance roads over the apron, including the former passenger boarding area and parade grounds, has changed historic spatial character and circulation patterns. Within the airfield, the growth of woods on formerly open land and turf has changed the historic open spatial character of the landscape, including key sight lines and runway clear zones. Within the Aviation Patrol Base, the loss of Hangar A (23) and two barracks (24, 38) has altered the spatial organization by removing key features. Within the Coast Guard Air Station, the replacement of the barracks (CG3) with a new, taller building in a new location has changed the spatial character of the landscape. Despite these changes, the overall design of the landscape shaped by key buildings, runways, taxiways, and building clusters remains intact from the end of the historic period in 1945. The change in the spatial character of the airfield due to growth of woods is reversible.

Evaluation: Retains integrity of design.

Setting

For the National Register, setting refers to the physical environment within and adjoining the property. Floyd Bennett Field retains the waterside and somewhat barren setting that characterized NAS New York in 1945, bounded by Flatbush Avenue on the west, Jamaica Bay to the east, Rockaway Inlet to the south, and Mill Basin to the north. Flatbush Avenue retains its same alignment and width. The wider setting still includes Brooklyn neighborhoods to the north across Shore Parkway, and to the south Fort Tilden, Jacob Riis Park, and neighborhoods on Rockaway Peninsula fronting the Atlantic Ocean. Changes to the setting include development of Gateway Marina on the west side of Flatbush Avenue within Deep Creek/Dead Horse Bay, and growth of woods within and adjoining the district on the formerly open airfield. Despite these changes, the overall setting

of Floyd Bennett Field remains similar to its condition in 1945. No new massive development has occurred within or adjoining the historic district.

Evaluation: Retains integrity of setting.

Materials

Materials are the physical elements, both natural and constructed, that were used historically within the cultural landscape. Overall, the built materials of brick, wood, steel, concrete, glass, and asphalt remain today. Most of the buildings dating from the municipal airport period are brick, steel, and glass, while those from World War II were wood frame with clapboard siding. Some historic materials are intact but covered, such as the asphalt block paving on parts of the Hangar Row apron, and concrete runways resurfaced in asphalt. Buildings constructed within the district after 1945 have departed from the historic materials, notably in the park comfort stations built of plastic and rough concrete block with low-pitched gable roofs, and in the park entrance road and parking lots built on runway 15-33 and the Hangar Row apron with their concrete curbs, steel guiderails, and bronze-finished metal light standards. The Aviator Sports infill building also diverges from the historic materials found on the hangars through its use of corrugated steel and bright-finish metals. The black-painted ornamental aluminum picket fence along Flatbush Avenue contrasts with the utilitarian chain-link fence that existed in 1945. In terms of natural materials, growth of deciduous woods on large areas of the airfield reflects a change in materials from mown turf and low scrub, and additional specimen trees have been introduced within the airport entrance. Despite these changes, the overall material palette remains little changed from 1945.

Evaluation: Retains integrity of materials.

Workmanship

Workmanship refers to the physical evidence of the crafts in the construction of the landscape. Many of the buildings and structures at Floyd Bennett Field show the fine workmanship of their original construction, including the steel and masonry construction of the hangars, the asphalt block-paving of the Hangar Row apron, and the concrete of the runways, drives, and walks. The frame buildings (50, 54) at the south end of Hangar Row show the workmanship of war-time construction. Although some features have lost their original craftsmanship due to contemporary reconstruction, such as the parking area in front of the Administration Building and replacement windows in Administration Building and Aviator Sports hangars, overall the landscape still displays the workmanship of its original construction as developed through 1945.

Evaluation: Retains workmanship.

Feeling

Feeling is an expression of the aesthetic or historic sense of a particular period of time in a cultural landscape. At Floyd Bennett Field, the feeling of the municipal airport and war-time naval air station has been lost in large part due to changes in use, natural systems, circulation, and level of maintenance. The lack of aircraft in the landscape, except for city police helicopters at the Coast Guard Air Station, has resulted in a distinct change in feeling. Historic planes are housed within Hangar B, but these are not visible in the landscape. The landscape has also lost the feeling of an active airfield due to blocking and covering of the runways with berms and mulch, and the construction of an access road, parking lots, and sports fields over runway 15-33 and the Hangar Row apron. Much of the change in the historic feeling of the landscape has resulted from the growth of woods that obscure historic sight lines and runway clear zones, reducing the once open and barren character. The feeling of the municipal airport and war-time naval air station has also been lost due to deteriorated buildings and naturalized and overgrown areas that detract from the once highly maintained landscape.

Evaluation: Does not retain integrity of feeling.

Association

Association refers to the direct link between the important historic event or person and the cultural landscape. Although no longer an active airport or military property, the landscape reflects its historic association with the City of New York, U.S. Navy, and U.S. Coast Guard through its buildings that reflect civic architecture and military design. Some of the buildings retain insignia and signs associated with their historic agencies, notably the Administration Building and the Coast Guard hangar. The city is still associated with the field through its Police Aviation Unit, although it is stationed at the Coast Guard Air Station rather than the city's municipal airport buildings. The historic association of the property has been lost in certain areas, particularly in the north half of Hangar Row where Aviator Sports' renovations give prominence to current association with the concessionaire and with Gateway National Recreation Area. Aside from this area, the historic associations remain evident in the landscape.

Evaluation: Retains integrity of association.

CULTURAL LANDSCAPE EVALUATION

The following section provides an in-depth evaluation of Floyd Bennett Field to determine the extent to which the cultural landscape retains its historic character from the period of significance. The cultural landscape evaluation process, which builds off the preceding National Register evaluation, consists of a comparison of historic conditions (1928-1945) with existing conditions (2008) according to the findings of the Site History and Existing Conditions chapters. While the cultural landscape evaluation follows the general guidelines of a National Register evaluation, it organizes the landscape by characteristics and features, rather than by resources in keeping with National Park Service cultural landscape methodology.¹⁴ Landscape characteristics are tangible aspects that define a landscape's overall appearance and aid in understanding its cultural value. Landscape features are the aspects that make up the characteristic and are the smallest unit in the evaluation process. The following is a list of landscape characteristics associated with the Floyd Bennett Field cultural landscape:

Natural Systems and Features: The natural aspects that have influenced the development and physical form of the landscape. This includes geology, hydrology, climate, flora and fauna. An example of a natural feature at Floyd Bennett is the successional woods.

Spatial Organization: The three-dimensional organization of physical forms and visual association in a landscape creating ground, vertical, and overhead planes that define and create spaces. Spatial organization at Floyd Bennett Field is defined by the wide, open spaces of the airfield and the more intimate space of the airport entrance.

Land Use: Describes the principal activities in a landscape that form, shape, and organize the landscape as a result of human interaction. Examples of land-use features at Floyd Bennett Field include the Ecology Village campgrounds and the archery range.

Cluster Arrangement: The location of buildings and structures in the landscape. Cluster arrangement at the field was historically defined by areas outside of the flight-path clear zones. The complex of buildings along Jamaica Bay is an example of cluster arrangement.

Topography: The three-dimensional configuration of the landscape surface characterized by man-made changes. The landmass consisting of fill and the berms closing off some of the runways are examples of topography at Floyd Bennett Field.

Vegetation: The deciduous and evergreen trees, shrubs, vines, ground covers, and herbaceous plants introduced in the landscape. Examples of vegetation at Floyd Bennett Field include the pine plantation at the Ecology Village campgrounds and the sycamore trees in the airport entrance.

Circulation: The elements that constitute systems of movement in the landscape. Circulation at Floyd Bennett Field includes the runways, taxiways, roads, sidewalks, compass roses, and parking lots.

Buildings and Structures: Three-dimensional constructs in the landscape; buildings are constructs for human shelter, while structures are not designed for human shelter. Examples of buildings at Floyd Bennett Field are the barracks and park comfort stations. Structures include the beacon tower and piers.

Views and Vistas: The prospect created by a range of vision in the landscape. Examples of views at Floyd Bennett Field are the sight lines along the runways.

Constructed Water Features: The built features and elements that utilize water for aesthetic or utilitarian functions. At Floyd Bennett Field, constructed water features include a pool in the Coast Guard Air Station and a naturalistic pond in the northern edge of the airfield (North 40 Natural Area).

Small-Scale Features: Elements that provide detail and diversity combined with functional and aesthetic concerns. At Floyd Bennett Field, small-scale features include fencing, light standards, and signs.

Archeological Features: Above-ground remains related to historic or prehistoric land use. Examples at Floyd Bennett Field include the wood piles along the Jamaica Bay shoreline remaining from piers and seaplane ramps. It is not within the scope of this CLR to evaluate below-ground archeological sites.

As described at the beginning of the chapter, the cultural landscape evaluation is divided into two parts: Part A, which provides a detailed feature-level evaluation of the proposed expanded Floyd Bennett Field historic district landscape, and Part B, which is a summary characteristic-level evaluation of the landscape outside of the historic district correlating to the South Administrative Area and most of the North 40 Natural Area. These two areas are not recommended for inclusion within the district due to a lack of integrity in the landscape. This evaluation does not assess the contribution of individual features that may be National Register eligible in areas outside the scope of this project, including architecture, engineering, and archeology.

A. HISTORIC DISTRICT EVALUATION (DRAWING 3.1)

The following evaluation of the landscape within the proposed expanded Floyd Bennett Field historic district is organized into a characteristics evaluation of the entire district followed by a feature-level evaluation organized by five character areas within the historic district: Hangar Row, Airport Entrance, Airfield, Aviation Patrol Base, and Coast Guard Air Station. Features within each character area are organized by landscape characteristic and are assigned a code that reflects the characteristic. For example, runway 1-19, a circulation feature, is assigned the code C-10. The exception to this format is building/structure features, which are only identified by the inventory number assigned by the Navy and the park. A complete list of features by code/building number is in Table 3.1 at the end of this chapter. The inventory numbers for all features are keyed to the Analysis and Evaluation Plan (Drawing 3.1)

Individual characteristics and features within the historic district are evaluated using the following format:

Historic Condition: A summary discussion of the history of the characteristic/feature during the period of significance including both the municipal airport (1928–1941) and World War II (1941–1945) periods.

Post-Historic and Existing Conditions: An overview of the existing condition of the characteristic/feature, noting changes since the end of the period of significance in 1945.

Evaluation: A determination of whether the characteristic or feature contributes to the historic character of the landscape based on a comparison of historic and existing conditions, according to the following findings:

Contributing: Characteristics or features that were present during the historic period, retain their historic character, and are associated with the historic significance of the landscape. Those that add prominently to the historic associations and qualities for which the landscape is significant are described as *character defining*. Features unique to the historic period are described as *distinctive*. Features that were minor and commonplace during the historic period are described as *typical*.

Non-Contributing: Features that were not present during the historic period and are not associated with the landscape's historic significance. Non-contributing features that are incompatible with

the historic character of the landscape, particularly in relation to historic materials, size, scale, proportion, and massing are described as *detracting*. Features distinguishable from the historic character of the landscape but relate to historic materials, size, scale, proportion, and massing are described as *compatible*.

Unevaluated: Features for which physical or historical documentation is insufficient or inconclusive. Further research and evaluation may provide an evaluation of either contributing or non-contributing.

For archeological features, the evaluation includes only a summary of known history and existing conditions on visible remnants of built features in the landscape. While the existing ruined state of these features does not contribute to the historic character of the landscape, the remains have the potential to reveal important information and to serve as interpretive elements.

LANDSCAPE CHARACTERISTICS EVALUATION (DISTRICT-WIDE)

Natural Systems and Features

Historic Condition: When the City of New York began construction of the municipal airport in 1928, most of the site of Floyd Bennett Field was a tidal estuary that had been altered as a result of port development in Jamaica Bay, construction of Flatbush Avenue, and dumping by the waste industries on Barren Island. This estuary consisted of open water, marshes, and small areas of upland. Construction of the municipal airport filled approximately 338 acres of the tidal estuary. The remaining estuary to the north was partially filled during the municipal airport period and then completely as part of the Navy's expansion during World War II. Despite the filling, the natural systems of Jamaica Bay continued to influence the shape of the land along the edges of the field, where natural sand beach and small areas of tidal estuary became reestablished. The rest of the landscape was highly managed, with natural vegetation limited to low scrub and grasses on the rougher fill north of the original airport.

Post-Historic and Existing Conditions: Since 1945, the natural sand beach and small areas of tidal estuary along Jamaica Bay and Mill Basin on the eastern and northern sides of the historic district have continued to shift and expand as areas of timber bulkhead have collapsed. A more noticeable change has been the growth of deciduous woods on the filled land, particularly within the rougher fill completed by the Navy north of the original airport.

Evaluation: Contributing/Non-Contributing

Natural marine and beach systems contribute to the historic character of the Floyd Bennett Field historic district, particularly to its setting. The woods that have grown up on formerly open land since 1945 through the process of natural succession do not contribute to the historic character of the landscape and detract from its historic spatial character (fig. 3.3)



Figure 3.3: Aerial views of Floyd Bennett Field looking northeast in 1947 as NAS New York (top) and today as part of Gateway National Recreation Area showing changes in spatial character, vegetation, and circulation. The top photograph represents general conditions at the end of the period of significance. The darker green areas in the current photograph are woods; lighter areas are scrub and managed grasslands. (Top: Photograph 16176, Gateway National Recreation Area Museum Collection; bottom: USGS aerial photography, 3-d animation courtesy of Microsoft LiveEarth, edited by SUNY ESF.)

Spatial Organization

Historic Condition: During the historic period, the landscape of the historic district consisted mainly of open space defined by clusters of buildings along Flatbush Avenue on the west and Jamaica Bay on the east, with open water extending into the distance on three sides. There were no woods or topographic changes to break up the vast space. The building clusters were organized into areas outside of flight-path clear zones (500 to 650 feet to either side of the runway), including Hangar Row along Flatbush Avenue and the Naval Aviation Patrol Base and Coast Guard Air Station along Jamaica Bay. The alignment of the runways and taxiways organized the airfield into distinct geometric forms, although these had little spatial quality but did accentuate the vastness of the landscape. In addition to these overall spaces, there were many smaller spaces, notably the airport entrance area defined by the Administration Building and flanking hangars, the aprons around the hangars, and the spaces defined by buildings in the Aviation Patrol Base and Coast Guard Air Station.

Post-Historic and Existing Conditions: Since the end of the historic period in 1945, the overall spatial character of the landscape has been altered through the growth of successional woods on formerly open field, the loss of buildings, and the construction of new buildings, fences, roads, and parking lots. Other notable changes have occurred through the planting of the Ecology Village pine plantation along the south side of the airfield; the addition of concrete barriers and berms closing off runways and taxiways; the addition of fencing along runway 12-30 and its use as a vehicle storage area; fencing of the airport entrance area; the loss of buildings and new construction within Hangar Row and the Naval Aviation Patrol Base; and construction of curbed parking lots on the Hangar Row apron.

Evaluation: Contributing

Spatial organization contributes to the historic character of the Floyd Bennett Field historic district as a defining characteristic of the landscape. In particular, the organization of the airfield with the primary buildings in close proximity to the primary highway (Flatbush Avenue) and seaplane facilities are defining characteristics of early municipal airports. The spatial character defined through the end of World War II by the flight-path clear zones is still visible in the landscape, although less discernable due to loss of buildings, construction of new features such as parking lots, and growth of woods (fig. 3.4) The changes have altered the vastness of the airfield, the definition of the building clusters outside of the flight-path clear zones, the spatial continuity of the Hangar Row apron, and the character of the entrance area.

Land Use

Historic Condition: During the municipal airport period, Floyd Bennett Field was a multiple-use aviation facility, used primarily for private aircraft with some



Figure 3.4: Historic (1944, top) and existing (2008) views looking northeast from the Hangar Row apron in front of the Administration Building showing changes in spatial character, land use, circulation, and views through addition of parking lots and growth of successional woods on the airfield. The concrete in the lower part of the lower photograph is the historic apron surface, covered by the later concrete and asphalt parking lots and entrance roads. In historic photograph, note the radio transmission towers visible north of the airfield. (Top: Photograph 237611, Still Pictures Unit, National Archives II; bottom: SUNY ESF.)

limited commercial passenger service. It was also used by the Navy as a training station, by the city police for its aviation unit, and by the Coast Guard (a quasi-military agency within the U.S. Department of Treasury) as an air station. During World War II, the military became the sole user of the landscape (the Navy assumed jurisdiction over the Coast Guard Air Station during the war). Where passengers once boarded planes along the Hangar Row apron at the Administration Building, the Navy held formal reviews and ceremonies. Military uses aside from aviation included residential, industrial, and administrative support functions. While most of these support functions were located outside of the historic district, the Navy did maintain barracks within Hangar Row, the Aviation Patrol Base, and the Coast Guard Air Station. The primary aviation-related uses were concentrated within the historic district with the exception of the Navy seaplane patrol base on Rockaway Inlet.

Post-Historic and Existing Conditions: After World War II, Floyd Bennett Field operated mainly as a naval air reserve training station, which focused on training and housing military personnel as well as maintaining aircraft. The Navy also leased out areas within the historic district to the New York City Police Aviation Unit and

the New York Air National Guard, and returned the Coast Guard Air Station to the jurisdiction of the Department of Treasury (later the U.S. Department of Transportation). Military aviation uses ceased in c.1971 when the Navy decommissioned the field. With the transfer to the National Park Service in 1972, recreation and natural resource conservation became the primary land uses, although the park leased areas to city police and sanitation agencies for use as training facilities. Public recreational uses led to the addition of features such as large parking lots and access roads on aprons and runways.

The Coast Guard Air Station continued to use its facility for aviation purposes until its closure and subsequent transfer of the property to the National Park Service in 1998. At this time, the city Police Aviation Unit moved into the Coast Guard facilities for its aviation (helicopter) programs. This is the only part of the historic district that continues in use as an aviation facility. The Department of Transportation (Federal Aviation Administration) retained a small parcel within the former Coast Guard property for a Doppler radar facility that is part of the air-traffic control system at JFK International Airport. Hangar B retains an aviation-

related use as a aircraft restoration facility for the Historic Aircraft Restoration Project (H.A.R.P.).

Evaluation: Non-contributing

The current land uses within the Floyd Bennett Field historic district do not contribute to the historic character of the landscape, with the exception of the police helicopter and H.A.R.P. aircraft restoration programs that continue historic aviation uses. Current uses, including recreation, natural resource conservation, training, and administration, are compatible with the landscape where they operate without substantially altering historic landscape features. The scale and management of some of these contemporary land uses, such as Aviator Sports and a program to return the airfield to natural conditions, has led to substantial changes to the historic landscape (see fig. 3.4).

Cluster Arrangement

Historic Condition: During the historic period, buildings within the Floyd Bennett Field landscape were clustered outside of the flight-path clear zones. These defined two clusters within the historic district: Hangar Row, defined by the flight-path clear zones for runways 15-33 (taxiway 10), 1-19, and 6-24; and the Naval Aviation Patrol Base/Coast Guard Air Station cluster along Jamaica Bay, defined by clear zones for runways 6-24, 1-19, and 12-30. The Hangar Row cluster was also initially defined by federal Air Commerce Act of 1926 that required hangars and support buildings to be aligned linearly along one side of the runways in order to receive the highest rating, A1A. During World War II, the Navy built some low-scale buildings within the flight-path clear zone of runway 12-30 at the south end of the Jamaica Bay cluster, but these were apparently located due to the pre-existence of the city seaplane pier and ramp that had been built prior to the construction of runway 12-30 in 1935.

Post-Historic and Existing Conditions: After the end of the historic period in 1945, the Navy continued to build only in the clusters defined by the flight-path clear zones. After the decommissioning of NAS New York in 1971, the runways were no longer used and therefore buildings in theory could be constructed anywhere in the landscape. While the demolition of a number of buildings reduced the cohesion of the Hangar Row and Jamaica Bay clusters, no new buildings have been constructed outside of the historic clusters within the flight-path clear zones, with the exception of the temporary police storage building in the maintenance area and the Doppler radar tower that infringe on the clear zone for runway 12-30. The growth of successional woods on the airfield since 1945 has blurred the definition of the clusters and their relationship to the flight-path clear zones.

Evaluation: Contributing

Cluster arrangement contributes to the historic character of the Floyd Bennett Field historic district as a defining characteristic of the landscape that reflects key



Figure 3.5: Historic (c.1938, top) and existing (2008) views looking in the same general easterly direction along taxiways 1 and 2 showing changes in topography and vegetation. The historic photograph shows level topography and low-mown airfield turf; the existing photograph shows the addition of berms closing off adjoining runways, and the change from mown turf to managed grasslands (taken in May prior to full height of the grasses). The historic photograph shows the gate and passenger boarding area on the Hangar Row apron that was later used as a parade ground by the Navy. (Top: Photograph 22016, Gateway National Recreation Area Museum Collection; bottom: SUNY ESF.)

design aspects of both early municipal airports and World War II-era naval air stations. While the loss of buildings and growth of woods have weakened their definition, overall the Hangar Row and Jamaica Bay clusters remain intact since the end of the historic period (see fig. 3.3).

Topography

Historic Condition: During initial construction of the municipal airport, the natural topography was altered from a series of islands, marshes, and creeks into an expansive, 387-acre level terrace raised sixteen feet above mean low tide. The filled land along the eastern and southern edges were supported by steel sheet-pile bulkhead. Outside of the runways, the airfield was finished as a level plane surfaced in clay and seeded topsoil to provide a sound base for emergency landings. When the Navy expanded the field in 1942, it dredged Jamaica Bay and completed filling of the area north of the original airport. The land was graded to match the elevation of the airport, although it was not as evenly graded and finished as was the original airfield.

Post-Historic and Existing Conditions: The topography of Floyd Bennett Field remained largely unchanged after 1945, with the exception of erosion along failed sections of the Jamaica Bay bulkhead, particularly at the former airport seaplane base (south of the Coast Guard Air Station). The park has also made small changes to the topography through the addition of earthen berms to close off runways and taxiways.

Evaluation: Contributing

Topography contributes to the historic character of Floyd Bennett Field historic district as a defining characteristic of the landscape. The flat, level topography was a key part of the landscape design intended to provide adequate landing surfaces for aircraft and to maximize sight lines. Aside from erosion along the Jamaica Bay bulkhead and addition of berms, the topography remains largely unchanged since the end of the historic period (fig. 3.5).



Figure 3.6: Historic (c.1938, top) and existing (2006) views of the airport entrance area looking southeast showing changes in vegetation, buildings, and small-scale features. The Navy maintained the shrubs through World War II, but changed the control tower cab as shown in the current photograph. The park removed the war-time wing that extended to the left of the Administration Building, and installed the fence and light standards. The World War II-period fence ran along Flatbush Avenue. (Top: Photograph 18394, Gateway National Recreation Area Museum Collection; bottom: SUNY ESF.)

Vegetation

Historic Condition: During the municipal airport period, there were four types of planted vegetation: turf on the airfield, a privet hedge at the north boundary of the airport designed as a sand trap, and ornamental plantings in the airport entrance, including sycamore trees, clipped privet hedges, shrubs, herbaceous plantings, and lawn. The sand-trap hedge was removed soon after the airport opened. The Navy maintained the rest of the vegetation during World War II, but did not establish turf in the northern expansion of the airfield. This area was apparently covered by native scrub and grasses. The Coast Guard established plantings around its main hangar in c.1937, including lawn, clipped hedges, and specimen trees.

Post-Historic and Existing Conditions: After 1945, the ornamental hedges and shrubs within the airport entrance area became overgrown and were removed. Under National Park Service management, the airfield turf was either left unmanaged to grow into scrub and woods, or managed as natural grasslands (high meadow). In c.1974, the park planted thousands of pine trees along the southern side of the airfield as shelter for

campgrounds. In c.2000, the park replanted the clipped privet hedges within the airport entrance area, and added deciduous trees. Yew and privet hedges line the lawn along the north side of the Coast Guard hangar.

Evaluation: Contributing

Vegetation contributes to the historic character of the Floyd Bennett Field historic district landscape, but it has been greatly diminished due to conversion of the airfield turf to successional woods and managed grasslands, and the loss of shrubs within the airport entrance area (fig. 3.6, see also fig. 3.5). The lawn and sycamore trees within the airport entrance area remain. The plantings around the Coast Guard hangar also remain, although changes in placement and species is not known.

Circulation

Historic Condition: Circulation at Floyd Bennett Field was dominated by the runways, taxiways, and aprons built of concrete and asphalt. The aprons, the areas where planes parked and taxied to the hangars and runways, were built of

concrete, including those added by the Coast Guard in 1936-37 and the Navy at the Naval Aviation Patrol Base in 1940-42. The city surfaced parts of the Hangar Row apron surrounding the hangars and Administration Building in black asphalt-block paving. The runways were built in three generations—the initial concrete construction in c.1929-30, concrete WPA additions in 1935, and the primarily asphalt Navy expansion in 1942, including an entirely new runway, 6-24. This runway was a replacement for the original 6-24, which could not be lengthened due to development of the patrol base at its eastern end. There were also three seaplane runways that the city and Navy maintained in Jamaica Bay, probably marked by buoys. These were linked to the airfield, Aviation Patrol Base, and Coast Guard Air Station by four seaplane ramps and a seaplane pier (see Buildings and Structures and Archeological Features characteristics).

Aside from three short taxiways built by the city to connect the Hangar Row apron with runway 15-33 (taxiway 10), the taxiways date to World War II, when the Navy created a perimeter system tying together the ends of each runway. The city also built a concrete-surfaced compass rose, a feature where planes would calibrate their compasses, between runway 15-33 and the Hangar Row apron. The Navy built a larger one at the eastern end of the field during World War II, and also added a dirigible landing area consisting of a circular earthen landing area and taxiway.

In addition to aviation circulation, Floyd Bennett Field also contained vehicular and pedestrian circulation features, including roads, parking lots, and walks. Roads included two diagonal concrete entrance drives in the airport entrance area. These two drives led to three parking lots: one paved in black asphalt block in front of the Administration Building, and two larger gravel lots to the north and south. The drives were paralleled by concrete sidewalks, and a central walk extended to Flatbush Avenue on axis with the main entrance of the Administration Building. A sidewalk also ran along Flatbush Avenue. During World War II, the Navy closed the diagonal drives and opened a new entrance off Flatbush Avenue at the south end of Hangar Row.

The city also built asphalt and earthen roads around the boundaries of the airfield, the south one of which accessed its seaplane base at Jamaica Bay. The Navy removed all of the north road and portions of the south boundary road as part of its World War II-era expansion. In place of these roads, the Navy built a patrol road that ran around the perimeter of Floyd Bennett Field. The Navy also built numerous asphalt drives and concrete sidewalks to new facilities in the Naval Aviation Patrol Base and maintenance area.

Post-Historic and Existing Conditions: Since 1945, the Navy lengthened the approaches to runways 6-24, 12-30, and 1-19, resurfaced concrete sections in asphalt, and changed the designation of runway 15-33 to taxiway 10, enlarged the Naval Aviation Patrol Base apron, and closed the World War II-era entrance off Flatbush Avenue. The Navy probably maintained the seaplane runways in Jamaica

Bay until NAS New York was decommissioned in 1971. The Coast Guard also expanded its apron and taxiway.

Most changes to the aviation circulation system occurred after the field was transferred to the National Park Service. These changes covered or blocked circulation patterns through addition of berms, concrete barriers, fencing, and mulch on the runways and taxiways. Permanent alterations were largely limited to Aviation Road and the Hangar Row apron on which were added large asphalt parking lots with concrete curbs, sidewalks, and light standards. These lots were accessed from a four-lane road built on taxiway 10 (runway 15-33) that replaced Aviation Road as the interior access to Hangar Road. The Aviator Sports infill building removed the section of apron between hangars 5-6 and 7-8. The park also converted the airport parking lot south of the Administration Building to lawn, and replaced the Flatbush Avenue sidewalk with a bikeway.

Evaluation: Contributing

Circulation contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining characteristic of both the municipal airport and World War II periods. Overall, the circulation patterns of the runways and taxiways remain intact from the end of World War II (see fig. 3.3). Many of the changes that have blocked or obscured the runways and taxiways are reversible. Changes to the Hangar Row apron, including the addition of parking lots, the entrance road over taxiway 10, and the removal of the apron between hangars 5-6 and 7-8 detract from the historic character of the landscape by obscuring key circulation features. Instead of the open areas where planes parked, passengers boarded, and Navy personnel marched in parade, the apron is today obscured by curbed parking lots and roads that mask the historic aviation circulation patterns (see fig. 3.4). While the lengthening of the runways undertaken by the Navy after World War II do not contribute, they are compatible with the historic character of the landscape and convey its continued aviation-military use during the Cold War.

Buildings and Structures

Historic Condition: Buildings and structures within the Floyd Bennett Field historic district consisted of facilities essential to the functioning of the airport as well as related military operations, including hangars, utility buildings, storage facilities, bulkheads, piers, and seaplane ramps. Building constructed by the city during the municipal airport period between 1929 and 1938 included the Administration Building, hangars, transformer vaults, pump houses, maintenance shops, and two tower buildings within the airfield that housed Sperry floodlights. These buildings reflected a unified design in an Art Deco style with neoclassical detailing using buff-colored tapestry brick, steel doors and windows, and flat roofs concealed behind parapets. One exception was the red-brick and marble-trim Administration Building, which was designed in a more conservative and familiar Neoclassical Revival style found in many public buildings of the period, with a

monumental entrance, double-hung sash windows, and a terrace with classical balustrade facing the airfield. The Coast Guard also followed a unified design approach to its hangar and garage built in 1936-37. In contrast to the municipal buildings, the Coast Guard used a nautical-inspired Moderne style with white-painted concrete walls, horizontal massing, flat roofs, and bands of windows. The Coast Guard also erected three, thirty-foot tall radio towers north of the hangar.

Buildings constructed by the Navy between 1940 and 1945, including those at the south end of Hangar Row and in the Naval Aviation Patrol Base, contrasted in style and construction to the earlier municipal buildings. The Navy buildings embodied a more austere, utilitarian character reflective of conditions during World War II and the national emergency that preceded it. The Navy buildings consist of two types: permanent and temporary. The permanent buildings, such as Hangar B in the patrol base and Power Plant B in the maintenance area, were constructed of steel and masonry. Temporary buildings, such as the fire house and training building at the south end of Hangar Row, were frame construction with gable roofs, clapboard siding, and double-hung windows. Navy structures included timber bulkheads, piers, and seaplane ramps. The Navy also erected four, 150-foot tall radio towers north of the airfield (outside of historic district).

As part of the development of the field, the city and Navy also built an extensive infrastructure of underground sewer, water, and electrical utilities. While the underground lines and vaults were not visible in the landscape except for manhole covers, the utilities did feature above-ground buildings and structures. Within the historic district, these included two small transformer vault buildings within Hangar Row (57, 120) that were designed in the standard municipal airport style, and a brick north substation (117) at the end of the patrol road along Flatbush Avenue. In the maintenance area within the Aviation Patrol Base was Power Plant B (96), a large red brick building that supplied the field with electricity along with a companion plant (Power Plant A/86) in the west barracks area near the marginal wharf (outside of district).¹⁵

Post-Historic and Existing Conditions: After World War II, the Navy, Coast Guard, and New York Air National Guard added and removed a number of buildings and structures within the historic district. These included the Air National Guard's nose hangar on Hangar Row, which replaced the municipal airport-era field house (2); the Navy's Tylunas Hall, a barracks that replaced two war-time frame barracks (24, 38) in the Naval Aviation Patrol Base; and new Coast Guard barracks (Edwards Hall) that replaced war-time frame barracks (CG-3). Within the airfield, the Navy removed the two municipal airport-era Sperry floodlight towers, several minor war-time buildings near the boat basin and pier on Jamaica Bay, the war-time rifle-range along Mill Basin, and two war-time training structures (tetrahedron and rocking platform). The Navy also constructed several small buildings (168, 169, 173, 174, 205) in the north end of the patrol base off taxiway 6, and built a lean-to on Hangar B. Although not within the district,

the Navy replaced the four war-time towers off the northern edge of the field with eleven new communications towers.

Most changes to buildings and structures came after the National Park Service took over the field in 1972. These were primarily demolitions, but also some limited new construction. Primary World War II-era buildings removed from Hangar Row and airport entrance area include hangars 9 and 10 (46, 51), the Navy sick bay (48), Administration Building wing (171), paint store house (47), and six frame buildings within the Navy area south of the Hangar Row apron (28, 58, 52, 53, 55, 56). New buildings within Hangar Row include the Aviator Sports infill between hangars 5-6 and 7-8 and a chiller building between hangars 5-6 and the Administration Building. The park also built a comfort station on the Hangar Row apron south of hangars 1-2.

Within the airfield, the park allowed the seaplane pier, ramp and boat basin pier along Jamaica Bay to fall to ruin, leaving just the wood piles. The timber and sheet-metal bulkheads along Jamaica Bay also fell to ruin and where they still performed a structural function such as at the patrol base, stone rubble was installed to shore up the fill. The park removed three aviation fuel tanks from the area Navy recreation area adjoining the Coast Guard Air Station. The park added numerous small frame pavilions and shelters within the airfield at Ecology Village campgrounds and Camps Tamarack and Goldenrod, along with two comfort stations, one along taxiway 6 and the other along runway 6-24. The Federal Aviation Administration built a Doppler radar tower within its separate federal property within the flight-path clear zone for runway 12-30.

Within the Naval Aviation Patrol Base, removed pre-1945 buildings included Hangar A (23) and four small buildings within the maintenance area (92, 93, 95, 104). The war-time pier and frame seaplane ramp associated with Hangar A have fallen to ruin, leaving only the piles. The New York City Police Aviation Unit added a large temporary building (407) at the southwest corner of the maintenance area, as well as a storage building within the Coast Guard Air Station (402).

The water, sewer, and electrical systems were continually modified and expanded after 1945. With connection to the public grid, Power Plants A and B (86, 96, the former outside of the district) were abandoned.

Evaluation: Contributing

Buildings and structures contribute to the historic character of the Floyd Bennett Field historic district landscape as a defining characteristic of both the municipal airport and World War II periods. Although some secondary municipal airport and World War II-era buildings and structures have been lost, notably within Hangar Row and along Jamaica Bay including barracks, seaplane ramps, and piers, the major civilian and military buildings remain, except for Hangar A within the Aviation Patrol Base (fig. 3.7, 3.8, see also fig. 3.6). Some of the historic buildings are in very poor condition, including Hangars 1-2 and several of the maintenance



Figure 3.7: Historic (c. 1945, top) and current (2006) views showing changes to Hangar B and its adjoining apron. The historic image is looking north at the south side of the hangar; the current view is looking east at the south side. This hangar, which was a match to Hangar A that no longer stands, presently houses the Historic Aircraft Restoration Project (H.A.R.P.). (Top: Photograph 13408, Gateway National Recreation Area Museum Collection; bottom: SUNY ESF)

area buildings. Despite this, these buildings retain sufficient integrity to convey their historic character. Most of the actively used existing historic building have not been significantly altered, with the exception of hangars 5-6 and 7-8 in Hangar Row that have been rehabilitated as part of the Aviator Sports complex (fig. 3.9). The buildings added by the Navy after 1945, primarily those within the utility and storage area in the northern part of the Aviation Patrol Base, do not detract from the historic character of the landscape because they convey the continued use of the field for military purposes. The park comfort stations and Doppler radar tower (US DOT) detract from the historic character of the landscape because they conflict with historic circulation patterns due to their locations on aprons and adjoining runways within flight-path clear zones.

Views and Vistas

Historic Condition: The expansive views off and into Floyd Bennett Field were critical to its historic use as an active airfield. These included sight lines along the runways, views across the open airfield, and panoramic views from the Administration

Building control tower. Operations on the airfield were also clearly visible from the main and west barracks areas to the south of the historic district, and from the radio towers and ammunitions magazines north of the historic district.

Post-Historic and Existing Conditions: Since the field was transferred to the National Park Service in 1972, many of the views have been lost due to natural succession on the airfield that has led to growth of woods twenty to thirty feet in height. Views to the South Administrative Area and North 40 Natural area (ammunitions-communication area) have also been lost due to successional woods and growth of the Ecology Village pine plantation planted in c. 1974. Ground-level views along the runways have also been obstructed by earthen berms and concrete barriers.

Evaluation: Contributing

Views contribute to the historic character of Floyd Bennett Field historic district landscape as a character-defining feature of both the municipal airport and World War II periods. While sight lines along the runways generally remain, the growth of woods on the approaches and in the flight-path clear zones have obstructed key views that were historically necessary for safe flying (see fig. 3.3, 3.5). Woods



Figure 3.8: Historic (c.1945, top) and current (2006 lower two) views illustrating changes to the Coast Guard Air Station and maintenance area in the Naval Aviation Patrol Base. The lower photograph shows the torpedo storage building (94), cold storage commissary (97), and general storehouse (98). (Top: Uncatalogued photograph, RG 80, National Archives II, College Park, Maryland; middle and bottom: SUNY ESF.)

in the northern part of the airfield not only obstruct what would have been critical views for aircraft to see each other on runways 6-24 and 1-19, but also diminish the visual connection to the control tower.

Constructed Water Features

Historic Condition: During the historic period, there were no constructed water features within Floyd Bennett Field. Three seaplane runways were laid out in Jamaica Bay during the municipal airport and World War II periods, most likely marked by buoys. These may have followed channelized areas of Jamaica Bay. While outside of the historic district, the seaplane runways related to the seaplane ramps and piers within the district (see Circulation and Buildings and Structures characteristics).

Post Historic and Existing Conditions: The Navy apparently maintained the seaplane runways in Jamaica Bay until NAS New York was decommissioned in 1971, although they had probably fallen out of active use during the 1950s. No markers remain visible in Jamaica Bay from the three runways. After closing of NAS New York, two constructed water features appeared within the field. The Coast Guard built a swimming pool north of its hangar and the park built a naturalistic pond off the northwest approach to runway 12-30 as part of the North 40 Natural Area.

Evaluation: Non-Contributing

Constructed water features do not contribute to the historic character of the Floyd Bennett Field historic district landscape because none existed

during the historic period within the historic district. Water, as a natural system, was a historically dominant part of the setting of Floyd Bennett Field.

Small-Scale Features

Historic Condition: There were a variety of small-scale features that supported the operation of the municipal airport and the naval air station during the historic period, notably aids to navigation, fences, and signs. During the municipal airport period, small-scale features within the airport entrance area included a flagstaff, rustic and cast-iron light standards, a rustic sign, and pipe and wood railings along



Figure 3.9: Historic (c.1935, top) and current (2008) views of hangars 5-6 and 7-8 in Hangar Row showing infill construction built as part of the recent Aviator Sports rehabilitation showing change to the historic character of the buildings and the surrounding apron. The historic aerial view is looking east, the current is looking west along the new entrance drive on the Hangar Row apron. The small building to the left of the Administration Building in the historic photograph was the municipal airport field house, demolished in c.1964. (Top: Photograph 18980, Gateway National Recreation Area Museum Collection; bottom: SUNY ESF.)

the eastern side of the parking areas. On the Hangar Row apron along the east side of the Administration Building, a cyclone fence with gates and a striped curb marked the entrance to the passenger boarding area (gate area). Within the airfield, small-scale features included ground-mounted perimeter and end-of-runway lights and a wind tee. The city also maintained wood fences that served as sand traps along the north and south boundaries of the airfield.

The Navy removed most of the municipal airport's small-scale features in its 1942 expansion of the airfield except for the flagstaff and rustic and cast-iron light standards within the airport entrance area. The Navy probably also removed the rustic airport sign. The Navy erected a perimeter chain-link fence along Flatbush Avenue and Shore Parkway upon commissioning of NAS New York in June 1941. Initially, this fence did not extend across the airport entrance area, although the Navy did install gate booths at the diagonal entrance drives. Upon acquisition of the field in 1941, the Navy erected a perimeter chain-link fence along Flatbush Avenue and Shore Parkway, and in 1942 extended it across the airport entrance area with permanently closed cyclone gates at the diagonal entrance drives.

Within the airfield, the Navy most likely installed

new navigational lights, although no documentation on these has been found. Within the Naval Aviation Patrol Base, the navy built a storage yard north of the expanded apron that was enclosed by a fence, and also installed a test backstop along the north end of the apron. In the former airport seaplane base, the Navy developed a recreation area that featured two ballfields that probably had chain-link backstops. The Coast Guard also built a ballfield near its hangar. Throughout the site, there probably were many directional and information signs, but no record of these has been found.

Post-Historic and Existing Conditions: Since 1945, the Navy and Coast Guard installed some new small-scale features within the historic district, notably a perimeter cyclone fence around the southeast half of runway 12-30, a cyclone fence around the NARDET facility within the Aviation Patrol Base, a memorial near the Coast Guard garage, and street lights along the entrance road to the Coast Guard Air Station and Aviation Patrol Base.

After 1972, most of the World War II-era small-scale features were removed. The park probably removed Navy signs and navigational lighting in the airfield,



Figure 3.10: Historic (1936, top) and current (2006) views of the airport entrance area looking east from Flatbush Avenue showing changes in small-scale features. The roof on the sign has been completed since the lower photograph was taken. The existing sycamore trees are most likely those visible as new plantings in the 1936 image. (Top: Photograph 69-N-7763D, Still Pictures Branch, National Archives II; bottom: SUNY ESF.)

and installed along with its partners a wide variety of small-scale features such as picnic tables, barbecues, garbage cans, benches, and park information/directional signs. At the community gardens is a great assortment of small-scale features including fences, benches, signs, and gates, and at the model plane flying field on runway 1-19 are bleachers, picnic tables, flagstuffs, and a cyclone fence. Steel guiderails line the public entrance road on taxiway 10 (runway 15-33), and concrete Jersey barriers close off runway 1-19 and line the entrance road to the Coast Guard Air Station. Tall metal light standards dot the parking lots on the Hangar Row apron. At the Aviator Sports facilities in the north half of Hangar Row are air conditioning units along hangars 4-5; bleachers, stadium lights, and perimeter fencing at the artificial turf fields north of hangars 7-8; and a mounted propeller plane at the main entrance between hangars 4-5 and 7-8. Sections of the World War II-era perimeter cyclone fence remain along Shore Parkway and portions of Flatbush Avenue, but along Hangar Row, the park has replaced the fence with an ornamental black metal picket fence. At the airport entrance area, the park realigned the fence to the inside edge of the diagonal entrance drives and central lawn, and

installed ornamental metal bollards across the head of both diagonal entrance drives. The park also removed the two municipal airport-era cast-iron light standards from the head of the central walk at Flatbush Avenue. The Air National Guard probably removed the rustic light standards from the airport entrance area during the 1960s. The park installed Central Park-style light standards around the perimeter of the central lawn and diagonal drives, installed interpretive waysides and Victorian-style benches, retained the flagstaff, and built a replica of the municipal airport rustic sign.

Evaluation: Non-contributing

Overall, existing small-scale features do not contribute to the historic character of the Floyd Bennett Field historic district landscape because most were added after the end of the historic period. While the key navigational small-scale features within the airfield have been lost, the airport entrance area retains its original flagstaff and a reconstruction of the municipal airport sign that remained through World War II (fig. 3.10, see also 3.6). Overall, the majority of the existing small-scale features do not relate to the historic aviation and military uses of the district.

Some small-scale features, notably the black metal picket fence and Central Park-style light standards at the airport entrance area, parking-lot lights, and fencing around the southeast half of runway 12-30, detract from the historic character of the landscape by altering the spatial character and design of the landscape. No complete record of small-scale features was documented for this report.

Archeological Features

Historic Condition: There were no known archeological features (above-ground remains) in the Floyd Bennett Field historic district at the end of the historic period in 1945.

Post-Historic and Existing Conditions: Since 1945, a number of built features have been removed, leaving foundations and other above-ground remnants. Examples include the door tracks and cut-off structural members from Hangar A that remain in the Naval Aviation Patrol Base apron, and wood piles along the Jamaica Bay shoreline that remain from the city seaplane pier, city seaplane ramp, Navy boat basin pier, seaplane ramp B, Aviation Patrol Base pier, and a pier at the Coast Guard Air Station. There are also remnants of roads and pavement, such as at the city seaplane base (Navy boat basin).

Evaluation: Unevaluated

Archeological features (above-ground remains) from features built during the historic period (1928-1945) have not been evaluated for this report. None add to the historic character of the Floyd Bennett Field historic district landscape, but some may have potential to reveal information about the historic use and development of the field. To date, the park has not undertaken a comprehensive archeological survey of Floyd Bennett Field, but has addressed potential archeological issues at the site through a draft Archeological Overview and Assessment for the entire Jamaica Bay Unit of Gateway National Recreation Area, and pre-planning for various construction projects.¹⁶

HISTORIC DISTRICT LANDSCAPE FEATURES EVALUATION

The following evaluation of the landscape features within the proposed expanded Floyd Bennett Field historic district landscape is organized into five character areas: Hangar Row, Airport Entrance, Airfield, Naval Aviation Patrol Base, and Coast Guard Air Station. A summary of the landscape features evaluation is in Table 3.1 at the end of this section.

HANGAR ROW LANDSCAPE FEATURES

The Hangar Row landscape retains much of its historic character as a linear alignment of large buildings parallel to Flatbush Avenue within the flight-path clear zone for runways 15-33, 12-30, and 1-19. Significant changes to the

landscape since 1945 have resulted from the redesign of aviation circulation patterns to accommodate visitors arriving in automobiles, and from adaptation of the buildings to contemporary recreational uses. Major features that have been lost since 1945 include two frame hangars built during World War II (46, 51), and seven buildings (27, 28, 52, 53, 55, 56, 58) within the former maintenance-barracks area at the south end of Hangar Row.

Spatial Organization Features

SO-1. Hangar Row

Historic Condition: The city initially developed Hangar Row in 1928-1931 as the primary cluster of airport buildings arranged between and paralleling Flatbush Avenue and runway 15-33. The spatial organization of Hangar Row reflected the Department of Commerce guidelines for airport development in the 1920s, which called for such an arrangement of buildings in order to achieve the highest rating of A1A.¹⁷ Initially, the hangars were laid out in four groups of two, but through the WPA, the city connected each pair with infill buildings constructed between 1934 and 1937. The connected paired hangars created sheltered spaces on their interior sides, as well as a central area surrounding the Administration Building (see Airport Entrance). The Navy expanded Hangar Row during World War II by constructing a fifth set of paired hangars at the north end of Hangar Row. Although this war-time development contrasted in appearance with the airport buildings, the placement continued the linear arrangement of Hangar Row defined by flight-path clear zones for runways 15-33, 12-30, and 1-19.

Post-Historic and Existing Conditions: Since 1945, the spatial organization of Hangar Row has been altered through the demolition of hangars 9-10 (46, 51) and their replacement by two fence-enclosed sports fields as part of the Aviator Sports complex. This development also included construction of a large infill building between the northern set of municipal hangars (5-6 and 7-8). This change, although designed to visually retain the separation between the two pairs of hangars, altered the symmetry of Hangar Row and removed the space between the two buildings.

Evaluation: Contributing

Hangar Row contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining spatial feature of the municipal airport period that was expanded during World War II. While two hangars have been lost and the northern set of hangars have been connected, overall the linear arrangement of Hangar Row and its relationship to Flatbush Avenue and adjoining flight-path clear zones remains intact.

SO-2. Maintenance-Barracks Area

Historic Condition: Between 1931 and 1935, the city developed a complex of maintenance and utility buildings off the south edge of the Hangar Row apron. The Navy expanded this complex during the national emergency that preceded World War II by constructing adjoining frame buildings as part of its Naval Reserve Aviation Base. During World War II, the Navy built additional buildings including barracks and a fire house in this complex along with a new entrance off Flatbush Avenue. These buildings were not aligned in a regular pattern as were those in Hangar Row, but they did conform to the flight-path clear zone for runways 15-33 and 1-19, with the exception of the public works office and police station (56) at the south end of the area adjoining the new entrance road.

Post-Historic and Existing Conditions: Since 1945, the spatial organization of the maintenance-barracks area has been altered through removal of six buildings and growth of successional woods that have altered the spatial definition of the area. Despite this, the remaining six building continue to read as a distinct space within the landscape.

Evaluation: Contributing

The maintenance-barracks area south of Hangar Row contributes to the historic character of the Floyd Bennett Field historic district landscape as a characteristic spatial feature of the municipal airport and World War II periods. The historic character of the area has been altered through the loss of buildings and growth of successional woods.

SO-3. Aviator Sports Fields

Historic Condition: Not applicable. The fields are located on what was historically an apron and site of two World War II hangars (46, 51) that housed the Naval Air Ferry Command.

Post-Historic and Existing Condition: In c.2005, Aviator Sports constructed two Astro-turf sports fields over the concrete apron at the north end of Hangar Row, to either side of a World War II-period transformer vault building (120). The fields do not align with the hangars in Hangar Row and block the historic circulation patterns on the Hangar Row apron. The fields are enclosed by chain-link fencing and lit by stadium lights. The south field includes bleachers.

Evaluation: Non-Contributing

The Aviator Sports fields do not contribute to the historic spatial character of the Floyd Bennett Field historic district landscape because they did not exist during the historic period. In placement and scale, the fields detract from the historic spatial character and circulation patterns within Hangar Row, but are located in a peripheral area.

Circulation Features

C-1. Airport South Boundary Road

Historic Condition: During the municipal airport period, the city maintained a narrow road that followed the south boundary of the airfield from Flatbush Avenue to the airport seaplane base on Jamaica Bay. The road paralleled a paper street on the opposite side of the airport property boundary on Barren Island that was surveyed prior to the development of the airport. In the World War II expansion of the airfield, the Navy removed portions of the south boundary road for development of taxiway 4 and the main barracks area. The section within Hangar Row was retained as a drive within the maintenance-barracks area south of Hangar Row, although the entrance onto Flatbush Avenue was closed.

Post-Historic and Existing Conditions: Since 1945, additional sections of the south boundary road have been lost. The section within the former maintenance-barracks area remains paved and in good condition. East of here, the road was removed as part of an extension of runway 1-19 in c.1955. Farther east, the road runs through the Ecology Village Campgrounds pine plantation, disappears east of taxiway 4, and then picks up again to the Jamaica Bay shoreline.

Evaluation: Contributing

The airport south boundary road contributes to the historic character of the Floyd Bennett Field historic district landscape as a distinctive circulation feature of the municipal airport period. Although sections of the road have been lost, overall it illustrates the original boundaries of the municipal airfield.

C-2. Hangar Row Apron

Historic Condition: In 1930 the Department of Docks built an apron—an area where planes parked and taxied—surrounding and east of the eight hangars and Administration Building. The sections of the apron surrounding the hangars were surfaced in black asphalt block pavers, while the continuous 350-foot wide section that ran north-south along the east side of the hangars was built of reinforced concrete. In 1935, the WPA widened the concrete section along the east side of the hangars to 400 feet. As part of this expansion, the city added two hatches and four rotating platforms east of the Administration Building on the section of the apron that served as a passenger boarding area. The hatches led to tunnels that connected to the Administration Building. This part of the apron was sectioned off from the Administration Building and airport entrance area by a cyclone fence with a series of gates through which passengers reached their planes. During World War II, the Navy removed this fence and used the passenger boarding section of the apron as a parade ground.

Post-Historic and Existing Conditions: Since 1945, the rotating platforms and tunnel hatches have been removed, although their location in the concrete

remains visible. Other sections of the apron were repaved in asphalt or were not maintained and have become overgrown with weeds and scrub, especially surrounding hangars 1-2. At the very south end of the apron, the two wood pavilions were erected for use by the adjoining community gardens. In c.1996, the park extensively altered the Hangar Row apron through the construction of two curbed parking lots and public access roads leading off runway 15-33 (taxiway 10). Another parking lot was added on the apron in c.2006 as part of the Aviator Sports complex, along with two outdoor sports fields at the north end of Hangar Row.

Evaluation: Contributing

The Hangar Row apron, constructed in 1930 and expanded in 1935, contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of both the municipal airport and World War II periods. The large extent of the apron allowed planes to move freely from the hangars to the runways, while the section directly east of the Administration Building served as the passenger boarding area during the municipal airport period and as a parade ground during World War II. While the addition of parking lots, access roads, buildings, and sports fields has maintained a generally open spatial character, these features detract from the apron's historic circulation patterns.

C-3. World War II Entrance Road

Historic Condition: In 1942, the Navy permanently closed the two diagonal drives at the original airport entrance and created a new gated entrance at the south end of Hangar Row south of the Navy Reserve Training complex. At Flatbush Avenue, the new entrance featured a gatehouse (55) to its north side and a public works office and police station (56) to the south. The asphalt road ran east approximately 500 feet to where it formed a 'T' intersection with another new road that ran north-south to Hangar Row and the west barracks area (present Aviation Road).

Post-Historic and Existing Conditions: The Navy closed the World War II entrance road in c.1951 when it built a new entrance (present park entrance) farther south near the west barracks area. This new entrance was required in part due to the extension of runway 1-19, which extended across Aviation Road that connected the old entrance to Hangar Row to the west barracks area. The war-time roadbed remains behind a locked gate, but the gatehouse and public works office/police station have been removed.

Evaluation: Contributing

The World War II entrance road contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the World War II period. Some loss of historic character has occurred due to the removal of the structures and lack of access, which alter its setting. Overall, the

road's current materials and dimensions remain as they were during the historic period.

C-4. Aviation Road

Historic Condition: In 1942, the Navy built a new road running south from the Hangar Row apron parallel to Flatbush Avenue to provide access from the new entrance on Flatbush Avenue to Hangar Row and the west barrack areas. This new road, later named Aviation Road, intersected the main road (Floyd Bennett Boulevard) to the main barracks area just north of the west barracks area.

Post-Historic and Existing Conditions: With the extension of runway 1-19 in c.1952, the Navy realigned a section of Aviation Road where it crossed the new runway approach. After c.1972, the northern part of Aviation Road was abandoned and vehicles instead used the parallel taxiway 10 (runway 15-33) to access Hangar Row from the main entrance on Flatbush Avenue. In c.1996, the park removed the intersection of Aviation Road at Floyd Bennett Boulevard and built an earthen berm to block access. At the same time, the park realigned the section of Aviation Road south of Floyd Bennett Boulevard and incorporated it into a new visitor parking lot.

Evaluation: Contributing

Aviation Road contributes to the historic character of the Floyd Bennett Field historic district landscape as one of the primary vehicular circulation features of the World War II period. The abandoned condition of the road and its loss of connection to the remainder of the field (outside of the historic district) detracts from its overall historic character.

C-5. Hangar Row Apron Parking Lots

Historic Condition: Not applicable. The parking lots are located on what was historically an active apron, where passengers boarded planes during the municipal airport period and where Navy personnel marched in parade during World War II.

Post-Historic and Existing Conditions: In c.1996, the park built two public parking lots on the Hangar Row apron to service the Ryan Visitor Center at the Administration Building. In 2006, Aviator Sports built a third parking lot on the apron east of hangars 5-6. Each parking lot features concrete curbs, concrete sidewalks, light standards, and access roads leading off the main public entrance road on runway 15-33 (taxiway 10).

Evaluation: Non-Contributing

The Hangar Row apron parking lots do not contribute to the historic character of the Floyd Bennett Field historic district landscape. The parking lots detract from the historic circulation patterns of the Hangar Row apron and alter the character of the airport passenger boarding/gate area and the war-time parade grounds.

C-10. Gateway-Rockaway Greenway Bikepath

See Airport Entrance Character Area.

Buildings and Structures Features**3, 4, 5, 6. Hangar Row Hangars 1-2, 3-4, 5-6, and 7-8**

Historic Condition: The Hangar Row hangars, located in a line between runway 15-33 (taxiway 10) and Flatbush Avenue, were completed in 1930 as part of the original development of municipal airport. Built to house and service aircraft, the city designed the expansive steel-frame structures in a modern Art Deco style that was subsequently employed as the standard for all airport buildings except for the Administration Building. This style, reflecting the modern function and advanced structural engineering of the hangars, employed buff tapestry brick, straight and curved parapets, stamped metal gables, expansive areas of glazing, and stylized classical cast-stone detailing, including quoins, coping, lintels, and water tables. The stamped metal gables above the sliding glazed hangar doors featured stylized-aviator wings at the apex and text that stated “City of New York,” “Floyd Bennett Field,” and the name of the tenant, such as a private aircraft company. The hangars also featured so-called lean-tos along either the east or west sides that provided shop, office, and repair space. When originally constructed, each pair of the 120-foot by 140-foot hangars had approximately fifty feet separating them. Between 1934 and 1937, the city with the help of the WPA constructed infill buildings connecting each pair. Above the entrance on the outward-facing side, each infill building featured a raised parapet above with a cast-stone bas-relief panel. The panel had the letters ‘N.Y.C.’ and ‘F.B.A.’ for Floyd Bennett Airport in the center surrounding by stylized propellers.

Post-Historic and Existing Conditions: Since 1945, the hangars have undergone a number of changes. The interiors of hangars 1-2 are in a ruinous state due to failed roofs, while adjoining hangars 3-4 have been stabilized. Despite deterioration, both sets of hangars remain largely intact. The northern hangars, 5-6 and 7-8, have been altered through the construction of a large infill building that spans the approximately 100-foot wide space between the two pairs of hangars. This infill was built as part of an extensive renovation of the hangars into the Aviator Sports and Recreation complex. Completed in 2006, the infill building extends above the roofline of each pair of hangars in a design intended to be reversible and distinguishable from the original buildings. Located within the hangars are ice skating facilities, gyms, and multi-use ball courts. The lean-tos and original infill building are programmed to be used as entertainment or party rooms. The new infill building features a rock-climbing wall and other features set against the former exterior facades of the historic buildings.

Evaluation: Contributing

The Hangar Row hangars contribute to the historic character of the Floyd Bennett Field historic district landscape as character-defining buildings of the municipal airport period. The Aviator Sports infill building detracts from the historic character of hangars 5-6 and 7-8 due to its scale and placement that alters the design and spatial character of the hangars and the surrounding apron. The deterioration of hangar 1-2 has not yet impacted the exterior character of the building aside from the loss glazing and its historically well-maintained condition. Despite these issues, the hangars remain rare-surviving examples of early airport architecture and lend the landscape much of its historic character.

26. Dope Shop

Historic Condition: The city built the Dope Shop, the largest of the secondary maintenance buildings within Hangar Row, with the help of the WPA in 1937. The three-bay garage building facing the south edge of the Hangar Row apron was designed in the standard Art Deco airport style with buff tapestry brick, cast-stone accents, and a curved parapet. The building was intended for use as an aircraft maintenance garage, where waterproofing varnish (dope) was applied. Upon the Dope Shop's completion, the Navy and the City of New York shared occupancy. In c. 1943, the Navy built a concrete-block lean-to on the Dope Shop's south side and used it as a public works storage building. The lean-to was approximately three-quarters of the height of the main building and had a sloped roof.

Post-Historic and Existing Conditions: After 1945, few changes were made to the Dope Shop or its lean-to aside from the insertion of modern overhead garage doors within the original glazed sliding doors. Long vacant, the building has deteriorated from lack of maintenance as evidenced by many broken windows.

Evaluation: Contributing

The Dope Shop contributes to the historic character of the Floyd Bennett Field historic district landscape as a distinctive building of the municipal airport period. The lean-to contributes as a typical war-time addition. While deteriorated, the building exterior remains largely intact with the exception of the garage doors.

30. Sewage Ejector Pump House

Historic Condition: The city built the sewage ejector pump house in c.1931 at the south end of Hangar Row adjacent to the Dope Shop. The building was designed in the standard Art Deco airport style using buff tapestry brick and cast-stone details with a flat roof and stepped parapet.

Post-Historic and Existing Conditions: No major changes have been made to the dope shop pump house exterior since the end of the historic period aside from graffiti on the north side.

Evaluation: Contributing

The sewage ejector pump house contributes to the historic character of the Floyd Bennett Field historic district landscape as a characteristic utility building of the municipal airport period. The building exterior appears to be intact.

44. Ammunition Locker

Historic Condition: In c.1942, the Navy built six ammunitions lockers (41-45) near the hangars. These were small sheds, approximately ten-feet square, with slab concrete walls and shed roofs.

Post-Historic and Existing Conditions: Since 1945, the ammunitions lockers have been removed from Hangar Row except for #44, which is adjacent to the east side of Hangar 3.

Evaluation: Contributing

Ammunition locker (44) contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical utility building of the World War II period that reflects the adaptation of the municipal airport for war-time use. The building exterior appears to be intact.

50. Fire House

Historic Condition: The Navy built a one-story fire house in 1942 as part of the complex at the south end of Hangar Row initially developed as a Naval Reserve Aviation Base. The Navy continued the building style it used on the adjoining barracks built in 1941 (27) with gable roofs, clapboard siding, and multi-paned double-hung sash windows. This style differed from the temporary war-time frame buildings constructed in the South Administrative Area, which were more horizontal in massing with hipped roofs and horizontal window muntins. The fire house, which matched the style of the adjoining Synthetic Training Building (54) was constructed directly behind the Dope Shop, perpendicular to Flatbush Avenue and adjacent to the airport south boundary road.

Post-Historic and Existing Conditions: After 1945, the Air National Guard used the fire house as a medical training building, without significant changes to the exterior. The building has stood vacant since c.1972 and the windows are presently boarded up.

Evaluation: Contributing

The fire house contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical building of the World War II period that reflects one of the Navy's two styles of temporary war-time construction. The building exterior appears to be unaltered since the end of the historic period.

54. Synthetic Training Building

Historic Condition: The Navy built a one-story building in 1942 as part of the complex at the south end of Hangar Row initially developed as a Naval Reserve Aviation Base. The building featured an “H” plan and was oriented perpendicular to Flatbush Avenue on the south side of the airport south boundary road. The Navy continued the building style it used on the adjoining barracks built in 1941 (27), using gable roofs, clapboard siding, and multi-paned double-hung sash windows. This style differed from the temporary war-time frame buildings constructed in the South Administrative Area, which were more horizontal in massing with hipped roofs and horizontal window muntins. The building was designated the Synthetic Training Building where simulation training took place.

Post-Historic and Existing Conditions: After World War II, the Synthetic Training Building was used as a barracks. At an unknown date, brick sheathing was added below the windows. The building is vacant.

Evaluation: Contributing

The Synthetic Training Building contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical building of the World War II period that reflects one of the Navy’s two styles of temporary war-time construction. The building exterior remains largely unaltered except for the addition of brick sheathing.

57. South Transformer Vault

Historic Condition: The city constructed a transformer vault in c.1932 at the south edge of the Hangar Row apron, adjacent to the sewage ejector pump house (30). The small ten-foot by twelve-foot, flat-roofed building was designed in the standard airport style with buff tapestry brick and cast-stone details.

Post-Historic and Existing Conditions: At an undetermined date after 1945, the windows were replaced and a cyclone fence was added around exterior electrical equipment.

Evaluation: Contributing

The transformer vault contributes to the historic character of the Floyd Bennett period as a typical utility building of the municipal airport period. The exterior remains intact except for replacement windows and addition of cyclone fencing and exterior electrical components.

120. North Transformer Vault

Historic Condition: In 1938, the city with the help of the WPA built a transformer vault within the airport’s overflow parking lot north of the Hangar Row apron. The fourteen-foot by twenty-two-foot flat-roofed building was designed in the standard airport style with buff tapestry brick and cast-stone details. In 1942, the Navy expanded the Hangar Row apron around the vault, and in c. 1943,

constructed a twelve-foot by twenty-six-foot addition on the south side of the using the same materials.

Post-Historic and Existing Conditions: No changes were made to the transformer vault after 1945. However, its setting was altered in 2006 through construction of the Aviator Sports fields, which surrounded the building.

Evaluation: Contributing

The transformer vault contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical utility building of the municipal airport period. The building's contemporary setting detracts from its historic character.

126. Paint Storage Building

Historic Condition: The Navy constructed a small parged concrete-block flat-roof paint storage building in c. 1944 in the airport maintenance area at the south end of Hangar Row. The building reflected utilitarian war-time construction.

Post-Historic and Existing Conditions: After 1945, the roof failed and the building deteriorated. It is presently in a state of ruin with a collapsed roof and missing northwest corner walls.

Evaluation: Non-contributing

The paint storage building does not contribute to the historic character of the Floyd Bennett Field historic district landscape due to lack of integrity resulting from advanced deterioration.

401. Hangar Row Comfort Station

Historic Condition: Not applicable. The site of the comfort station was part of the Hangar Row apron where planes taxied to hangars 1-2 and the Dope Shop.

Post-Historic and Existing Conditions: In 2006, the park installed four pre-fabricated comfort stations manufactured by CXT Concrete Buildings, including one on the Hangar Row apron south of hangars 1-2. The tan and brown building has a front-facing low-pitched gable roof and two restrooms.

Evaluation: Non-contributing

The park comfort station at the south end of Hangar Row does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was constructed after 1945. Its location detracts from the historic circulation patterns of the Hangar Row apron and its design is incompatible with the adjoining historic buildings in Hangar Row.

402. Aviator Sports Chiller Building

Historic Condition: Not applicable. The site of the chiller building during the historic period was part of the apron where planes taxied into hangar 6.

Post-Historic and Existing Conditions: Aviator Sports constructed a one-story chiller building in front of the south aircraft doors of hangar 6 in c.2006 (the doors are replacement windows installed as part of the Aviator Sports rehabilitation of the hangars). The approximately sixty-foot long building has metal siding, a flat roof, and exterior chiller units on the east side. There are also two separate air-conditioning towers on the south side. The chiller building and towers are clearly visible from the adjoining airport entrance and Ryan Visitor Center in the Administration Building.

Evaluation: Non-contributing

The Aviator Sports chiller building does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was constructed after 1945. Its location, scale, and design detract from the historic character of Hangar Row and the airport entrance area, and conflict with the historic circulation patterns by blocking the aircraft doors at hangar 6.

Small-Scale Features

Aviator Sports has added a number of small-scale features within its assigned area at the north half of Hangar Row, including cyclone fences, bleachers, stadium lights, air-conditioning unit towers, a mounted propeller plane, scoreboards, and nets. These are all non-contributing and overall detract from the historic character of the Hangar Row landscape.

SSF-1. Perimeter Fence

Historic Condition: When the Navy took over Floyd Bennett Field in 1941, it erected a chain-link security fence along Flatbush Avenue and Shore Parkway, separating the hangars from Flatbush Avenue. When the Navy acquired ownership of the property in January 1942, it extended the fence across the airport entrance area, closing off the diagonal entrance drives with permanently closed gates. The fence was approximately six feet tall and had barbed wire along the top.

Post-Historic and Existing Conditions: In c.1972, the park removed the fence from the airport entrance area, and in c.2000 installed new black-painted chain-link fence bordering the hangars and a new fence along the inside edges of the diagonal entrance drives (see SSF-6 Airport Entrance Fence). In c.2004, the park replaced portions of the perimeter fence along Flatbush Avenue to accommodate the Rockaway-Gateway Greenway bikepath. The section at the south end of Hangar Row was set back from the road along a curving alignment that followed the bikepath.

Evaluation: Contributing

The existing original sections of the Flatbush Avenue fence contribute to the historic character of the Floyd Bennett Field historic district landscape as a typical

small-scale feature of the World War II era. Along Hangar Row, the replacement fence is generally compatible in design and location. The realigned section at the south end of Hangar Row detracts from the historic character of the landscape.

AIRPORT ENTRANCE LANDSCAPE FEATURES

The airport entrance is a space within Hangar Row defined by the Administration Building, hangars 3-4 and 5-6, and Flatbush Avenue. This landscape retains much of its historic character defined by a park-like central lawn area flanked by diagonal entrance drives, and open spaces historically containing parking lots. Significant changes to the character of this landscape since 1945 have resulted from loss of the field house (2), a small building constructed in 1938 that housed concessions and restrooms for passengers that matched the style of the Administration Building; demolition of the Navy sick bay (48), a frame building constructed in 1942 south of the Administration Building; removal of the Navy's wing built in 1942 off the north side of the Administration Building to house a war-time communications center; and replacement of the south parking lot with lawn. The historic character of the landscape has also been altered by the loss of plantings along the diagonal entrance drives and around the Administration Building, construction of a fence around the central lawn area, and addition of Victorian-style light standards, benches, and water fountains. The addition of the Aviator Sports chiller building and air-conditioning unit towers within the Hangar Row character area has also changed the setting of the airport entrance landscape.

Spatial Organization Features

SO-4. Airport Entrance Area

Historic Condition: The airport entrance area was initially defined through the completion of hangars 3-4 and 5-6 in 1930 and the Administration Building in 1931. These buildings created a rectangular space that was open to the west toward Flatbush Avenue. The space was further delineated with the construction of fences along the north, east, and south sides adjoining the Hangar Row apron. In c.1932, the city defined the interior of the space through the addition of two diagonal entrance drives that defined a central lawn area, a central parking area, and two larger parking lots north and south of the Administration Building. The addition of hedges and trees along the drives and walk in the center of the lawn in c.1935, and construction of the Field House (2) on the east side of the north parking lot in 1938 further defined the internal spatial character. During World War II, the Navy made minor changes to the space by enclosing the Flatbush Avenue side with a chain-link fence; removing the gates and fences along the

Hangar Row apron; and by constructing a building (sick bay, 48) along the east side of the south parking lot.

Post-Historic and Existing Conditions: After 1945, the New York Air National Guard altered the spatial character of the airport entrance area with the addition of a large nose hangar (265) north of the Administration Building in 1964. Removal of the hedges and other shrubs also changed the subtle spatial definition within the central lawn area. Since c.1980, the park has reestablished some of the historic spatial character of the municipal airport period by removing the nose hangar and Navy sick bay and by replanting the hedges, but also added new features including an ornamental black metal picket fence and specimen trees along the inner side of the diagonal entrance drives and center parking lot.

Evaluation: Contributing

The airport entrance area contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining spatial feature of the municipal airport period. While the overall space defined by the flanking hangars and Administration Building remains, details of the space have been altered through removal of the Field House, Navy sick bay, and plantings, and addition of a fence that divides the central lawn area from the rest of the space.

Vegetation Features

V-1. Central Lawn and Sycamore Trees

Historic Condition: In c.1932, the city established a lawn in the airport entrance area defined by diagonal entrance drives and sidewalks, Flatbush Avenue, and a small central parking lot in front of the Administration Building. In 1935, the city added plantings and small-scale features to the lawn as a WPA project. The planting plan consisted of privet hedges lining the sidewalks to either side of the diagonal drives, individual shrubs lining the drives, shrub masses at the head of the drives, and sycamore trees lining Flatbush Avenue and the walk through the center of the lawn. Rhododendrons and perennials were planted around the airport sign at the center of the lawn. Aside from rhododendron and privet, the types of plants used is not known. The city's initial planting plan, which was not fully implemented, specified juniper, spirea, lilac, forsythia, rose-of-sharon, roses, cannas, hydrangea, azaleas, vinca, and ivy, among others. The Navy did not significantly alter the plantings during World War II.

Post-Historic and Existing Conditions: After 1945, all of the plantings were removed except for the turf and sycamore trees. In c.2000, the park replanted privet hedges along the outer side of the sidewalks lining the diagonal drives and new black metal picket fence, but added trees within the hedge. One sycamore tree is missing from the central walk and several from along Flatbush Avenue.

The city has substituted Japanese pagoda trees for many of the sycamores along Flatbush Avenue outside of the historic district.

Evaluation: Contributing

The central lawn and sycamore trees contribute to the historic character of the Floyd Bennett Field historic district landscape as typical vegetation features of the municipal airport period. The sycamore trees bordering the lawn along Flatbush Avenue, within the city right-of-way, are part of this feature because they were planted at the same time when the city owned both properties. The lawn and trees are remnants of more extensive plantings intended to provide a welcoming, park-like atmosphere to the airport entrance. While the replanted hedge has reestablished a part of this planting design, the insertion of trees within the hedge detracts from the historic character of the landscape.

V-2. Administration Building Foundation Plantings

Historic Condition: In 1935, the WPA established foundation plantings around the entire Administration Building, set within beds bordered by narrow strips of lawn, marble edging, and sidewalks. The shrubs were maintained as low, clipped masses. A planting plan for the front of the building specified a rear row of rhododendrons with three rows of lilies in front, and junipers to either side of the entrance stairs. It is not know if the plan was implemented as specified. The Navy kept the foundation plantings during World War II, except for those on the north side that were probably removed for construction of the communications wing (171).

Post-Historic and Existing Conditions: After 1945, all of the foundation plantings were removed, and additional areas of turf have been added on the north and south sides. There is a young juniper to one side of the main entrance stairs, and some herbaceous plants in the flanking wood-chip mulched beds, including yucca, prickly pear, lilies, and liriop.

Evaluation: Non-contributing

The existing Administration Building foundation plantings do not contribute to the historic character of the Floyd Bennett Field historic district landscape because the woody shrubs are missing and the herbaceous plants apparently consist of non-historic species, with the exception of the juniper flanking the main entrance stairs.

V-3. South Lawn

Historic Condition: Not applicable. The site of the south lawn was a parking lot during the historic period.

Post-Historic and Existing Conditions: In c.1980, the park removed the World War II-era Navy sick bay (48) from the south parking lot that had been built during the municipal airport period. In c.1996, the park removed much of the

paved surface of the lot and replaced it with lawn. There was a planting bed with a narrow area of lawn along the north side of the parking lot during the municipal airport period, but the park removed it and in its place built an access drive to the parking lots on the Hangar Row apron.

Evaluation: Non-contributing

The south lawn, which replaced the airport south parking lot, does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it did not exist during the historic period. The lawn detracts from the historic circulation patterns in the airport entrance area.

Circulation Features

C-6. Airport Entrance Drives

Historic Condition: In c.1932, the city built two entrance drives that came in at a diagonal off Flatbush Avenue and converged in a central parking lot in front of the Administration Building. The drives also provided access to the two main parking lots north and south of the Administration Building. The drives were surfaced in concrete and edged by concrete curbs. The south drive was one-way, and the north one, two-way. During World War II, the Navy closed off the diagonal entrance drives with chain-link fence/gates along Flatbush Avenue, and constructed a new entrance at the south end of Hangar Road.

Post-Historic and Existing Conditions: Since 1945, the entrance drives have been resurfaced in asphalt and have remained closed for vehicular use. In c.2000, the park closed off the upper end of the drives with a black metal picket fence/gate, and installed ornamental bollards across the lower end at Flatbush Avenue. In 2004, the park built asphalt bike paths across the lower ends of the drives. Weeds are growing through cracks in the asphalt.

Evaluation: Contributing

The airport entrance drives contribute to the historic character of the Floyd Bennett Field historic district landscape as a character-defining circulation feature of the municipal airport period. The entrance drives were the main visitor access roads during the airport period and defined the organization of the entrance area landscape. Aside from resurfacing in asphalt and being blocked with contemporary fences and bollards, the drives retain their historic character.

C-7. Airport Entrance Walks

Historic Condition: As part of the construction of the diagonal entrance drives in c.1932, the city built concrete walks surrounding the central lawn. The walks were approximately four feet wide and featured a course aggregate. There were four walks paralleling either side of the entrance drives, one lining the curved east side

of the central parking lot, and one that ran through the central lawn to Flatbush Avenue on axis with the main entrance of the Administration Building. The diagonal walks aligned with the walks that extended around the Administration Building. The walk through the central lawn circled the airport flagstaff and sign before tying into the sidewalk along Flatbush Avenue. The inner walks along the diagonal drives featured a small triangular terrace at the intersection with the Flatbush Avenue sidewalk. During World War II, the Navy cut off access to the walks from Flatbush Avenue with a cyclone perimeter fence, but did not otherwise alter the walks.

Post-Historic and Existing Conditions: Since 1945, sections of the walks have been replaced with different concrete mixtures, and the alignment of the walks along the drives with the walks around the Administration Building has been altered. The park has also installed a black metal picket fence along the outer walk along the diagonal entrance drives that cuts off access to the walks, except at the central walk where there is a gate.

Evaluation: Contributing

The airport entrance walks contribute to the historic character of the Floyd Bennett Field historic district landscape as a distinctive circulation feature of the municipal airport period. The walkways were part of the formal design of the landscape and imparted a park-like feeling to the airport entrance. While the walks remain largely intact, the introduction of fencing blocking access to the walks detracts from their historic character.

C-8. Airport Entrance Central Parking Lot

Historic Condition: In c.1932, the city laid out a small parking lot in front of the Administration Building as part of the initial layout of the airport entrance landscape. The parking lot featured a curved east side, concrete curbs, and black asphalt-block paving. Flush curbs marked the edges between the asphalt-block paving and adjoining gravel parking lots.

Post-Historic and Existing Conditions: After 1945, the central parking lot was resurfaced in asphalt, and its configuration was partially altered along the north and south sides due to realignment of the circulation around the Administration Building. In 2008, the entire lot was reconstructed with new asphalt paving and concrete curbs.

Evaluation: Contributing

The central parking lot contributes to the historic character of the Floyd Bennett Field historic district landscape as a distinctive circulation feature of the municipal airport period. Although the original surface has been replaced and its configuration partially altered, the lot overall retains its design and character as a forecourt to the Administration Building.

C-9. Airport Entrance North Parking Lot

Historic Condition: In c.1932, the city laid out gravel parking lots to the north and south of the Administration Building, bordered by the Hangar Row apron, diagonal entrance drives, and Flatbush Avenue. These two large lots served as the primary public parking areas for the airport. The north lot featured a secondary access drive from Flatbush Avenue along its north side. In c.1938, the city built the Field House (2) on the east side of the north parking lot. The Navy maintained the two lots through World War II, although it removed part of the north lot for the Administration Building wing (171) and paint store house (47), and part of the south lot for the sick bay (48). The Navy probably also removed the fence that surrounded the north, east, and south sides of the lots, and probably resurfaced the lots in asphalt.

Post-Historic and Existing Conditions: In 1965, the Air National Guard removed the eastern part of the north parking lot along with the Field House for construction of its nose hangar (265). In c.1996, the park removed the south parking lot and replaced it with lawn. In c.2000, the park removed the nose hangar from the north parking lot, and resurfaced the lot as an extension of the adjoining parking lot built on the Hangar Row apron in c.1996. A linear drain marks the approximate boundary of the historic parking lot.

Evaluation: Contributing

The airport entrance north parking lot contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the municipal airport period. While the overall extent of the parking lot remains, its details have been altered, notably its eastern, southern, and northern boundaries.

C-10. Gateway-Rockaway Greenway Bikepath

Historic Condition: Not applicable. The site of the bikepath was a public sidewalk along Flatbush Avenue and part of the entrance area landscape during the historic period.

Post-Historic and Existing Conditions: In c.2004, the park built an asphalt bikepath approximately ten feet wide over the sidewalk along the east side of Flatbush Avenue as part of the Gateway-Rockaway Greenway. At the airport entrance area, the bikepath veered east around the intersection of the diagonal entrance drives, cutting across the turf area and sidewalks.

Evaluation: Non-contributing

The Gateway-Rockaway Greenway Bikepath does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. The bikepath detracts from the historic geometry of the entrance area landscape.

Buildings and Structures

1. Administration Building

Historic Condition: The Administration Building, the central focal point of the airport entrance area, was built in 1930-31 as the civilian airport's passenger terminal and office building. Constructed by the city Department of Docks (architect not known), the two-story building on a raised basement was designed in the Neoclassical Revival style typical for early twentieth century public buildings such as post offices, court houses, schools, and train stations. The city intended the conservative and familiar style of the building to make passengers feel comfortable with the new technology of flight. The building faced the park-like central lawn and Flatbush Avenue, with its control tower and service doors concealed from view on its east side facing the airfield.

In contrast to the Art Deco style of the hangars and other airport buildings, the Administration Building featured red brick walls, a monumental entrance with recessed portico, classical marble and cast-stone details, multi-paned double-hung windows, and an entablature with the name of the airport in bronze letters. The octagonal four-story control tower projected from the east elevation with its cab rising above the parapet. The metal-sheathed cab featured arched window openings, classical detailing, and a large clock mounted below. Also on the east side of the building was a balustrade terrace that served as an outdoor waiting area and observation deck. The roof of the Administration Building was outfitted with a flagstaff, spotlights, signals, and radio antennae. In 1935, the city built a WPA-funded tunnel from the building to the boarding area to allow passengers to reach planes without crossing the apron. The central stem of the tunnel headed 124 feet east, it then branched 120 feet north and south. At the end of the branches, a flight of stairs led to hydraulically lifted hatches that opened onto the Hangar Row apron.

During World War II, the Navy made a number of changes to the Administration Building. It changed the text on the entablature and replaced the arched windows on the control tower cab to increase visibility across the expanded airfield. The new windows were remarkably contemporary in appearance with full glazing that angled outward to reduce glare. The Navy also built a wood frame wing (171) off the north side of the building to serve as a communication center. The addition was one story tall and measured 60 feet by 73 feet. It connected to the main building via a narrow corridor that led directly to the first floor.

Post-Historic and Existing Conditions: Since 1945, a few changes have been made to the Administration Building. In c.1955, the Navy replaced the original windows with metal-frame units with horizontal muntins. In c.1980, the park removed the World War II period wood-frame wing as part of an effort to restore

Hangar Row to its appearance during the municipal airport period. In c.2000, the park replaced the Navy windows with double-hung windows similar to the originals.

Evaluation: Contributing

The Administration Building, constructed in 1930-1931, contributes to the historic character of Floyd Bennett Field historic district landscape as a character-defining building of both the municipal airport and World War II periods. While the 1943 wood-frame addition has been removed, the original building's materials and overall design remain intact. The changes made to the control tower, although not original to the building, reflect the Navy improvements made during World War II.

29. Fire Pump House

Historic Condition: As part of WPA-funded improvements, the city constructed a one-story pump house at the west side of the north parking lot in 1938 to house equipment for the airport's sprinkler/fire suppression system. The small, twenty-two-foot by thirty-foot building employed the unified airport style with buff tapestry brick, cast-stone details, and a parapet surrounding a low-hipped copper roof with the title "Pump House" in the cast-stone entablature. At the same time, the city built a small gasoline pump house (145) to the north of the pump house. In c.1942, the Navy built a one-story wood-frame lean-to on the west side of the pump house, and a large holding tank on its east side. The Navy also built a paint store house (47) north of the pump house.

Post-Historic and Existing Conditions: No changes were made to the fire pump house until c.2000, when the park demolished the World War II-era lean-to and holding tank. Soon after this time, Aviator Sports built a chiller building and two air-conditioning towers to the north of the pump house.

Evaluation: Contributing

The fire pump house contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical utility building of the municipal airport period. It is remnant of a small complex of utility/service buildings at the northwest corner of the airport entrance area. While the building exterior remains intact to the municipal airport period, its setting has been altered with the addition of the Aviator Sports chiller building and air-conditioning towers.

145. Beacon Tower

Historic Condition: Not applicable. The site of the beacon tower was a lawn strip along the western edge of the north parking lot during the historic period.

Post-Historic and Existing Conditions: In 1957, the Navy erected a steel-frame beacon tower at the west side of the north parking lot adjoining the fire pump house and Flatbush Avenue. The tower housed an aviation beacon light.

Evaluation: Non-contributing

The beacon tower does not contribute to the historic character of Floyd Bennett Field historic district landscape because it was built after the end of the historic period. The beacon tower is a compatible feature because it reflects the continued use of the field for aviation.

Views and Vistas

VV-1. Control Tower View

Historic Condition: The control tower on the east side of the Administration Building, completed in 1931, featured a glazed cab that allowed panoramic views out across the airport. During World War II, the Navy replaced the glazing to allow increase visibility across the enlarged airfield. All runways and taxiways were visible from the control tower.

Post-Historic and Existing Conditions: After the Navy transferred the field to the National Park Service, the park did not maintain views from the control tower since the field was not used for aviation. In the following decades, growth of successional and planted woods on the northern and southern parts of the airfield partially blocked views of runways and taxiways.

Evaluation: Contributing

The view from the control tower contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining characteristic of the municipal airport and World War II periods. Although the view of runway 6-24, taxiway 6, and taxiway 4 from the control tower has been partially obstructed, overall the visual relationship to the airfield remains intact.

Small-Scale Features

SSF-2. Airport Entrance Light Standards

Historic Condition: As part of the completion of the airport entrance landscape in 1935, the city installed four light standards within the central lawn area. Two were cast-iron standards with urn-shaped luminaires installed to either side of the head of the central walk at Flatbush Avenue. The other two were wood light standards installed at the east side of the lawn adjacent to the central parking lot. These rustic wood standards featured bracketed arms and drop-pendant luminaires facing the central lawn. They were the same style standard used at state parks and parkways during the time, but in a pedestrian scale. The Navy retained the four light standards during World War II.

Post-Historic and Existing Conditions: At some point after c.1960, the wood light standards were removed. The park removed the cast-iron standards in c.2000 and placed them in storage, and installed approximately twenty-two Central

Park-style light standards along Flatbush Avenue and both sides of the diagonal entrance drives.

Evaluation: Non-contributing

The existing airport entrance light standards do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they did not exist during the historic period. The placement and Victorian style of the light standards detracts from the historic design of the airport entrance area.

SSF-3. Airport Entrance Flagstaff

Historic Condition: As part of the completion of the airport entrance landscape in 1935, the city installed a white-painted steel flagstaff in the center of the airport entrance lawn area (V-2), encircled by the central walkway. The flagstaff had three black-painted band joints and a pair of beacon lights at the top.

Post-Historic and Existing Conditions: At some point after 1945, the paired beacon lights were removed and replaced with a ball finial.

Evaluation: Contributing

The airport entrance flagstaff contributes to the historic character of the Floyd Bennett Field Historic district as a distinctive small-scale feature of the municipal airport period. The loss of the paired beacon lights detracts from the aviation character of the landscape.

SSF-4. Airport Entrance Sign

Historic Condition: As part of the completion of the airport entrance landscape in 1935, the city installed a rustic stained or varnished wood entrance sign in front of the flagstaff at the central entrance walk from Flatbush Avenue. The sign was approximately eight feet in height overall and featured a brick base and a gable-roofed pavilion sheltering the sign board that had carved lettering. The sign read “Floyd Bennett Airport” with the corporate seal of New York City at the bottom flanked by two metal rings. The Navy retained the sign through World War II.

Post-Historic and Existing Conditions: The Navy removed the airport entrance shortly after the end of World War II. In May 2006, the park reconstructed the sign using the original plans as part of the commemoration of the 75th anniversary of the opening of Floyd Bennett Field as a municipal airport.

Evaluation: Contributing

The airport entrance sign, an accurate reconstruction of the original, contributes to the historic character of the Floyd Bennett Field Historic district as a distinctive small-scale feature of the municipal airport period. It may also contribute to the character of the landscape during the World War II period.

SSF-5. Airport Entrance Furnishings

Historic Condition: Not applicable. There were no benches, water fountains, or trash cans in the central lawn area during the historic period.

Post-Historic and Existing Conditions: In c.2000, the park installed Victorian-style benches and water fountains in the small concrete plaza at the intersection of the diagonal walks and the Flatbush Avenue sidewalk, and Victorian-style bollards across the head of the entrance drives. These furnishings matched the design of the Central Park-style light standards. The park also installed contemporary-style bike racks, garbage cans, and two interpretive waysides within the lawn area. There were no such features within the entrance area during the historic period.

Evaluation: Non-contributing

The airport entrance furnishings do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they did not exist during the historic period. The Victorian-style benches, water fountains, and bollards detract from the historic character of the landscape because they are incompatible with the historic design of the entrance area and give a false sense of history.

SSF-6. Airport Entrance Fence

Historic Condition: During the municipal airport period, there was no fence separating the airport entrance area from Flatbush Avenue. During World War II, the Navy installed a chain-link fence along Flatbush Avenue and across the diagonal entrance drives to secure the perimeter of the field. The fence was approximately six feet tall and had barbed wire along the top, and gates at the entrance drives.

Post-Historic and Existing Conditions: The park removed the chain-link fence from the airport entrance area in c.1972. In c.2000, it installed a new fence along a new alignment along the outer edges of central lawn area, following the perimeter sidewalks. The approximately six-foot tall black metal fence has an ornamental design consisting of square posts and rails, pickets, and brick piers at the north and south corners. The fence has three gates, two at the diagonal drives and one at the central walk. The two drive gates are locked. Mounted on the three gates are bas-relief globes with stylized wings. See also Hangar Row Character Area, SSF-1, Perimeter Fence.

Evaluation: Non-contributing

The airport entrance fence does not contribute to the historic character of the Floyd Bennett Field because it did not exist during the historic period. The fence detracts from the historic spatial character and circulation patterns of the entrance area.

AIRFIELD LANDSCAPE FEATURES

The airfield, the largest of the character areas within the Floyd Bennett Field historic district, consists of the runways, taxiways, and most of the land within the outside boundaries of the flight-path clear zones. Included within this character area are parts of the land presently managed as the North 40 Natural Area, as well as the Ecology Village campgrounds, Camps Tamarack and Goldenrod, and the Floyd Bennett Field community gardens. Overall, the airfield retains its character defined by the taxiways and runways, but has lost some of its defining open spatial character due to the growth of successional woods, and circulation patterns due to the addition of berms, jersey barriers, fences, and guiderails that block runways and taxiways. Significant features lost since 1945 include a complex of four small utility buildings at the World War II-era boat basin (formerly the airport seaplane base); two training structures—a rocking platform and tetrahedron, and also a rifle range along Mill Basin; two floodlight towers dating to the municipal airport period; a dirigible landing area; and a system of runway and navigational lights. Wood piles remain along the Jamaica Bay shoreline from the airport seaplane ramp and pier, and from the World War II-era boat basin pier.

Natural Systems and Features

NS-1. Successional Woods

Historic Condition: Not applicable. The airfield and all areas of Floyd Bennett Field were devoid of woods during the historic period.

Post-Historic and Existing Conditions: After 1945 and more specifically after 1972, lack of mowing on portions of the airfield and adjoining areas allowed the growth of deciduous woods through the process of natural succession. These woods grew mostly in the north half of the airfield and Naval Aviation Patrol Base, corresponding with the rougher ground of the World War II-era expansion. At the south side of the airfield, successional woods occur at the southeast end of runway 12-30, while younger successional vegetation, including scrub and young trees, characterize the southwest quadrant surrounding the Ecology Village pine plantation.

Evaluation: Non-contributing

The successional woods on the airfield and elsewhere do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they did not exist during the historic period. The woods detract from the historically open spatial character of the airfield and adjoining areas that were critical to maintaining open views and clear zones for safe landing and takeoff.

NS-2. Jamaica Bay Beach

Historic Condition: Soon after construction of the airfield landmass in 1928-29, natural sand beach became reestablished along the steel bulkhead bordering Jamaica Bay. The line of the beach swelled at the various piers and seaplane ramps. Additional sand beach also became reestablished as the city and Navy extended the fill northward. The lack of bulkhead along the shoreline north of the Naval Aviation Patrol Base created a wider swath of beach and associated uplands ecosystems. During World War II, the Navy maintained a picnic area on the section of beach near its recreation area and boat basin south of the Coast Guard Air Station.

Post-Historic and Existing Conditions: After c.1972, the placement of stone rip-rap along deteriorating sections of bulkhead shifted the extent of the beach. The beach has continued to shift due to natural forces of currents and tides.

Evaluation: Contributing

Although inconspicuous from within the airfield, the sand beach along the Jamaica Bay shoreline contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical natural feature of the municipal airport and World War II periods. While the beach has continued to shift naturally over time, it retains its overall character.

Spatial Organization Features**SO-5. Airfield**

Historic Condition: The airfield was a completely open space during the historic period bordered by building development outside of flight-path clear zones. It was open to surrounding water and marshlands outside of the building clusters. Within the interior of the airfield, there were three areas outside of the clear zones where there were vertical features. These included two masonry Sperry floodlight towers erected during the municipal airport period, and two training structures (rocking platform and a tetrahedron) installed during World War II.

Post-Historic and Existing Conditions: After 1972, the open spatial character of the airfield changed with the demise of active aviation uses. Changes included the growth of successional woods in the north half and at the southeastern corner of the airfield, planting of pine plantation on the south side of the airfield, and construction of a Doppler radar tower on the eastern approach to runway 12-30 near Jamaica Bay. The open spatial character was also changed when the Coast Guard fenced off the southeast half of runway 12-30 and its subsequent use for storage of tractor-trailers, cars, and other vehicles.

Evaluation: Contributing

The airfield space, originally constructed in 1928 and expanded in 1942, contributes to the historic character of Floyd Bennett Field historic district

landscape as a character-defining spatial feature of both the municipal airport and World War II periods. While successional and planted woods have grown up on approximately one-third of the airfield, overall the historically open character of the space remains dominant.

SO-6. Cricket Field

Historic Condition: Not applicable. The cricket field is located on what was open airfield on the approach to runway 12-30 during the historic period.

Post-Historic and Existing Conditions: In c.2000, the park partnered with a private club to build a cricket field in the approach to runway 12-30 in the northwest corner of the airfield, north of Hangar Row. Aside from a berm along its west side, the field does not include any above-ground built features, such as fences or lights.

Evaluation: Non-contributing

The cricket field does not contribute to the historic character of the Floyd Bennett Field historic district landscape. Because it does not have any vertical features, it is compatible with the open spatial character of the airfield.

Land Use Features

LU-1. Airfield Campgrounds

Historic Condition: Not applicable. The campgrounds are located on what was open airfield during the historic period.

Post-Historic and Existing Conditions: Currently there are six campgrounds at Floyd Bennett Field constructed in two different locations within the airfield. At the south side of the airfield are the Ecology Village campgrounds, consisting of four individual camps: Camp Ladybird, Camp Marshawk, Camp Pheasant, and Camp Cherry. These campgrounds all contain small wood-frame shelters with metal roofs and picnic tables beneath. Two of the three have ten wooden tent platforms around the perimeter of the campsite; the third has six small wooden cabins with screen doors and windows. At the northeastern side of the airfield are Camps Tamarack and Goldenrod, which are located on the site of the World War II-era dirigible landing area that is now enclosed by successional woods. These two also have shelters with picnic tables but no cabins or tent platforms.

Evaluation: Non-contributing

The airfield campgrounds do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they did not exist during the historic period. The camp facilities are presently concealed from view by woods and therefore do not directly impact the overall character of the airfield.

LU-2. Floyd Bennett Community Gardens

Historic Condition: Not applicable. The site of the community gardens was open airfield during the historic period.

Post-Historic and Existing Conditions: In c.1980, the Floyd Bennett Garden Association established a large community garden complex on the airfield turf on the west side of runway 15-33 (taxiway 10) off the southeast end of the Hangar Row apron. The gardens expanded to include 557 plots, making it the largest in Brooklyn. The gardens feature a wide variety of garden plants, specimen trees, sculptures, two wood gazebos, a picnic/barbecue area, and small-scale features, including fences, gates, and trellises. Gardeners park on runway 15-33 or the Hangar Row apron.

Evaluation: Non-contributing

The Floyd Bennett community gardens do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they were developed after the end of the historic period. Although contained within a defined area, the gardens detract from the open spatial character of the airfield.

LU-3. Model Airplane Flying Field

Historic Condition: Not applicable. The site of the flying field was part of the airfield and approach to runway 1-19 during the historic period.

Post-Historic and Existing Conditions: In c.1980, the park allowed a private club to operate a model airplane flying field on the c.1952 extension of runway 1-19 at the northeast corner of the airfield. The flying field includes an announcer's booth and covered seating area.

Evaluation: Non-contributing

The model airplane flying field does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was not a land use during the historic period. While within the historic flight-path clear zone, the built features are compatible due to their small scale and temporary construction.

LU-4. North 40 Natural Area (Extends beyond historic district)

Historic Condition: Not applicable. The site of the North 40 Natural Area was open airfield and an ammunitions storage and communications area during the historic period.

Post-Historic and Existing Conditions: After c.1972, the radio towers were removed and the ammunitions magazines were abandoned (outside of historic district). The park allowed the formerly open area north of runway 6-24 to grow into woods (see NS-1) and laid out a system of trails there in c.1980 (C-23), along with a pond and photo shelter (CWF-1). Only the portion of the North 40 Natural Area within the historic flight-path clear zones for runways 1-19, 6-24, and 12-30 is within the historic district.

Evaluation: Non-contributing

The North 40 Natural Area does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was introduced after the historic period. Management as a natural area has led to a loss of the airfield's historic open character.

Topography Features***T-1. Berms***

Historic Condition: Not applicable. The berms are located on what were active runways and taxiways during the historic period.

Post-Historic and Existing Conditions: As part of construction of the public entrance road on runway 15-33 (taxiway 10) in c.1996, the park built grass-covered earthen berms, approximately six feet in height, at the intersection of a number of runways and taxiways to close off access and purportedly to enhance the aesthetics of the landscape. The berms are located along the entrance road on runway 15-33, at taxiway 1-2, taxiway 4, and between runway 1-19 and 6-24.

Evaluation: Non-contributing

The berms do not contribute to the historic character of Floyd Bennett Field historic district landscape because they did not exist during the historic period. They detract from the historic spatial character and circulation patterns of the airfield.

Vegetation Features***V-4. Airfield Grasslands***

Historic Condition: As part of the initial construction of the airfield in 1928-29, the city finished the fill with subsoil, topsoil, and grass seed, and then maintained the airfield as mown turf. This turf surface, which was intended for use as emergency landing areas, extended from the Hangar Row apron east to approximately 500 feet from the Jamaica Bay shoreline. When the Navy expanded the airfield in 1942, it continued to maintain the airfield turf, but did not establish new turf over most of the new areas, except bordering the runways and taxiways. The Navy appears to have minimally graded the expanded areas and allowed natural grasses and scrub to become established.

Post-Historic and Existing Conditions: Between 1945 and 1971, the Navy maintained the mown turf and appears to have kept down woody vegetation on the expanded parts of the airfield. After the field was transferred to the National Park Service, the park mowed some of the airfield, but let much of it go to natural succession. In c. 1985, the park began managing part of the airfield as naturalized

grasslands, primarily the area corresponding to the original municipal airfield, in order to provide wildlife habitat. The grasslands consist of a wide variety of grasses and herbaceous plants, both native and introduced, which are mown on a semi-annual basis and reach a maximum height of approximately four feet.

Evaluation: Non-contributing

The existing airfield grasslands do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they differ from the historically mown turf that was necessary to maintain sight lines and emergency landing areas. Further research would be needed to determine the Navy's management of the vegetation in the expanded areas of the airfield where there was not mown turf.

V-5. Ecology Village Pine Plantation

Historic Condition: Not applicable. The site of the pine plantation was open field during the historic period.

Post-Historic and Existing Conditions: In c.1974, the park planted thousands of pine trees, including white pine and red pine, in a triangular area at the southern side of the airfield adjoining taxiway 4 as shelter for the Ecology Village campgrounds. The pines generally follow the former flight-path boundaries except at the west end of the woods, but the limits are being blurred by old-field succession (scrub and small trees) taking over the adjoining areas of the airfield. The mature pine trees are now approximately thirty feet tall and some are dying.

Evaluation: Non-Contributing

The Ecology Village pine plantation do not contribute to the historic character of Floyd Bennett Field historic district landscape because they were planted after the historic period. Although the woods are mostly outside of the historic flight-path clear zones, they obstruct the view of taxiway 4 from the control tower. Old-field succession in the adjoining areas of the airfield are further detracting from the open spatial character of the airfield.

Circulation Features

C-1. Airport South Boundary Road

See Hangar Row Character Area.

C-11. Runway 15-33 (Public Entrance Road)

Historic Condition: Runway 15-33, which runs parallel to Hangar Row, is one of the two runways original to the municipal airport (see C-16 for the second original runway, which was reclassified as taxiways 1 and 2). Completed in 1930, it was initially 3,100 feet long and 100 feet wide and made of steel reinforced concrete

with gravel strips located along the edges. In 1935, the city and WPA lengthened the runway to 3,500 feet and connected it to runways 12-30 and 1-19. In 1942, the Navy lengthened the runway to 4,500 feet and widened it to 300 feet, connecting its north end to the new runway 6-24. The Navy extensions were completed with asphalt, leaving the original concrete intact.

Post-Historic and Existing Conditions: Between 1945 and 1965, the Navy redesignated runway 15-33 as taxiway 10. In c.1996, the park built a four-lane asphalt public entrance road to Hangar Row over the former runway, running roughly along the centerline and taking up approximately one-quarter of the runway surface. At the same time, the park added berms to close off the intersections with taxiway 4, runway 1-19, and to define the intersection of taxiways 1 and 2. The entrance road extends from the main entrance on Flatbush Avenue, turns north onto taxiway 7 (taxiway to former seaplane base along Rockaway Inlet), and continues north along taxiway 10 until terminating south of the runway 12-30 intersection. Two spurs run west to access parking lots on the Hangar Row apron. The road includes a striped median and steel guiderails.

Evaluation: Contributing

Runway 15-33 contributes to the historic character of Floyd Bennett Field historic district landscape as a defining circulation feature of the municipal airport and World War II periods. While the addition of the four-lane road detracts from the historic circulation patterns of the runway, the historic runway surface remains intact beneath and to either side of the road.

C-12. Runway 1-19

Historic Condition: In 1935, the city used the WPA to construct two new runways, 1-19 and 12-30, that crossed the airfield diagonally. Runway 1-19 was 3,500 feet long and 150 feet wide with a concrete surface. The purpose of the two new runways was not only to expand the capacity of the airport, but also to give aircraft four directions in which to land into the wind, rather than two. With the introduction of heavier aircraft, such as the DC-2 and DC-3, the option of landing into the wind on the open airfield turf, as the airport had originally been designed, was no longer possible. To land safely, these aircraft required stable pavement. In 1942, in order to meet the needs of still larger aircraft, the Navy widened runway 1-19 to 300 feet with concrete extensions and lengthening it to 5,000 feet, using asphalt at the north end where it intersected the new runway 6-24.

Post-Historic and Existing Conditions: During the Korean War with the introduction of jet aircraft, the Navy built concrete extensions at either end of runway 1-19 that lengthened it to 7,000 feet. Completed in 1951, the main extension was on the north end, with a smaller area on the south. The Navy also surfaced the approaches to the extensions in a soil cement, most likely to stabilize the sandy soil from heavy jet back draft. As part of this extension, the Navy also managed a fenced-in area on the west side of Flatbush Avenue within Brooklyn

Marine Park as part of the runway approach (outside of historic district). Between c.1980 and c.1996, the park placed mulch over the southwestern half of runway 1-19 as part of an effort to restore natural conditions in the airfield, which the park was managing as a natural area. In c.1996, the park installed earthen berms that closed off the intersections with runway 6-24 at the north, runway 12-30 in the middle of the airfield, and runway 15-33 (park entrance road) on the south. The park also installed jersey barriers to restrict further access at the runway 6-24 intersection. The Korean War-era extension is used as a model airplane flying field.

Evaluation: Contributing

Runway 1-19 contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of the municipal airport and World War II periods. The Korean War-era extensions are compatible with the runway and convey its continued aviation use during the Cold War. While the additions of mulch, berms, and jersey barriers detract from spatial character and circulation of the runway, the historic surface remains intact underneath.

C-13. Runway 12-30

Historic Condition: In 1935, the city used the WPA to construct two new runways, 1-19 and 12-30, that crossed the airfield diagonally. Runway 12-30 was 3,500 feet long and 150 feet wide with a concrete surface. The purpose of the two new runways was not only to expand the capacity of the airport, but also to give aircraft four directions in which to land into the wind, rather than two. With the introduction of heavier aircraft, such as the DC-2 and DC-3, the option of landing into the wind on the open airfield turf, as the airport had originally been designed, was no longer possible. To land safely, these aircraft required stable pavement. Runway 12-30 was designated as blind landing runway and was outfitted with landing lights along its edges and an instrument landing beam signal on its south approach. In 1942, in order to meet the needs of still larger aircraft, the Navy widened runway 12-30 to 300 feet with concrete extensions and lengthened it to 5,000 feet with asphalt. The blind landing equipment was removed as part of the enlargement.

Post-Historic and Existing Conditions: In c.1960, the Navy built a soil-cement approach at the northwest end of runway 12-30, probably to stabilize the soil from heavy jet back draft. A small soil-cement collar was also added to the southeast end. In c.1972, the Navy transferred the southeastern half of the runway to the Coast Guard, who enclosed the runway with a chain-link fence. Between c.1980 and c.1996, the park placed mulch over part of the northwestern half of the runway as part of an effort to restore natural conditions in the airfield, which the park was managing as a natural area. In c.1996, the park installed earthen berms on the runway at the Coast Guard fence and at the intersections of runway 1-19 and taxiway 3. In 1998, the Coast Guard transferred its property including its

section of runway 12-30 to National Park Service. The park assigned the Coast Guard property to the New York Police Aviation Unit, which uses the fenced-in runway as a storage area for tractor-trailers, cars, and other vehicles.

Evaluation: Contributing

Runway 12-30 contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of the municipal airport and World War II periods. While the fence, stored vehicles, mulch, and berms detract from the spatial character and circulation of the runway, the historic surface remains intact underneath. The soil-cement approach is compatible with the character of the runway and illustrates its continued aviation use during the Cold War. Runway 12-30 is the only runway that retains its World War II-period dimensions.

C-14. Runway 6-24

Historic Condition: The municipal airport's runway 6-24 was inadequate for the Navy because it could not be lengthened at either end due to the presence of buildings in Hangar Row and the Naval Aviation Patrol Base. In 1942, the Navy converted runway 6-24 into taxiways 1 and 2, and built a new runway 6-24 (same cardinal direction) along the north side of the newly expanded airfield. The new runway 6-24 was built in asphalt and measured 5,000 feet long and 300 feet wide.

Post-Historic and Existing Conditions: In c.1960 at the beginning of the Vietnam War, the Navy lengthened runway 6-24 to 5,800 feet with a concrete extension at its east end. This extension required a small area of fill into Jamaica Bay. A short taxiway (#8) was built at the same time to connect with the extension of runway 1-10. In c.1996, the park closed off access to runway 1-19 with berms and jersey barriers, but otherwise left runway 6-24 open for vehicular use and for occasional aircraft landings. Visitors park on the eastern extension to fish in Jamaica Bay, or in the middle to access the North 40 Natural Area trails.

Evaluation: Contributing

Runway 6-24 contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of the World War II period. The Korean War-era extension is compatible with the character of the runway and illustrates its continued aviation use during the Cold War. Runway 6-24 is the only runway that presently retains most of its historic circulation pattern.

C-15. Hangar Row Taxiways

Historic Condition: In the original layout of the municipal airport, the west end of runway 6-24 (later taxiways 1 and 2) served as the taxiway to the Hangar Row apron. This single taxiway apparently became a point of congestion because in 1932, the city added three taxiways connecting runway 15-33 with the Hangar

Row apron: two north of runway 6-24 and one to the south. Each taxiway was steel-reinforced concrete and thirty feet wide. In 1935, the city used the WPA to widen each taxiway to 100 feet at the same time that the Hangar Row apron was widened.

Post-Historic and Existing Conditions: In c.1965, two sections of turf between the northern three taxiways were paved over to create an expansion of the Hangar Row apron for the New York Air National Guard, which was building its nose hangar north of the Administration Building. In c.1996, the park built two asphalt roads across former runway 6-24 and the north taxiway to connect parking lots on the Hangar Row apron with the public entrance road built on runway 15-33 (taxiway 10).

Evaluation: Contributing

The Hangar Row taxiways contribute to the historic character of the Floyd Bennett Field historic district landscape as typical circulation features of the municipal airport periods. Their character has been diminished by paving of the airfield turf between the northern three taxiways and the addition of vehicular roads that conceal the historic limits and circulation patterns. The southern-most taxiway is the only one of the four that remains unchanged.

C-16. Taxiways 1 and 2 (Former Runway 6-24)

Historic Condition: Taxiways 1 and 2, which run perpendicular to Hangar Row, together comprise one of the two runways original to the municipal airport; the other is runway 15-33 (C-11). Completed in 1930 with the designation of 6-24, it was initially 4,000 feet long and 100 feet wide and made of steel reinforced concrete with gravel strips located along the edges. Unlike 15-33, runway 6-24 was not widened during the WPA-funded improvements of 1935, although its center was altered by the crossing of runways 1-19 and 12-30. The Navy also did not enlarge the runway during World War II because of the obstructions at either end in the Aviation Patrol Base and Hangar Row. Instead, the Navy redesignated runway 6-24 as taxiways 1 and 2 (taxiway 1 forming the eastern half, taxiway 2 the western) that tied into a new perimeter system of taxiways. The Navy did extend the runway a short distance at its eastern end to connect with the expanded Naval Aviation Patrol Base apron and taxiways 5 and 6.

Post-Historic and Existing Conditions: After 1945, the Navy paved over sections of the original concrete surface with asphalt. In c.1996, the park built earthen berms at the west end of the taxiway at its intersection with runway 15-33 (taxiway 10/public entrance road).

Evaluation: Contributing

Taxiways 1 and 2, completed in 1930, contribute to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of the municipal airport period. Aside from repaving and addition of berms, taxiways 1 and 2 have not been altered since the end of the historic period. The

taxiways have special interpretive value as a relatively intact feature of the original municipal airport circulation system.

C-17. World War II Taxiway System (Taxiways 3-6)

Historic Condition: In 1942, the Navy built a circumferential taxiway system as part of its expansion of the airfield. Aside from taxiways 1 and 2 on the former runway 6-24, the system included five new runways, numbered 3 through 7. This system connected the ends of each of the four runways and added a fourth taxiway to the Hangar Row apron. The system also connected to the Naval Aviation Patrol Base and Coast Guard Air Station, which previously had no connection to the runways. One taxiway (#7) accessed a new seaplane base on Barren Island south of the airfield (extending south from runway 15-33, outside of historic district). The taxiways were 100 feet wide and surfaced in asphalt.

Post-Historic and Existing Conditions: In c.1960, the Navy added an eighth taxiway to its circumferential system (see C-18). In c.1972, the Coast Guard erected a fence across taxiway 5 to enclose its expanded property that included the south half of runway 12-30. In c.1996, the park built earthen berms that closed off taxiway 4 at its intersection with runway 15-33 (taxiway 10/public entrance road) and taxiway 3 at its intersection with runway 6-24. The park uses part of taxiway 5 as a storage area for mulch.

Evaluation: Contributing

The World War II taxiway system (taxiways 3-6) contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining circulation feature of the World War II period. Circumferential taxiway systems were typical circulation features of Naval Air Station design during World War II. Aside from the addition of berms and fences closing off three of the taxiways, the system has remained intact since the end of the historic period.

C-18. Taxiway 8

Historic Condition: Not applicable. The site of taxiway 8 was open airfield during the historic period.

Post-Historic and Existing Conditions: In c.1960 at the beginning of the Vietnam War, the Navy built a short asphalt taxiway, designated as #8, at the northeast corner of the airfield to connect the extension of runway 6-24 that was built at the same time with the extension of runway 1-19 that was built in c.1951.

Evaluation: Non-Contributing

Taxiway 8 does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it did not exist during the historic period. The taxiway is compatible with the character of the landscape and illustrates its continued aviation use during the Cold War.

C-19. Municipal Airport Compass Rose

Historic Condition: As part of the WPA-funded improvements to the airport, the city built a compass rose in 1935 between the Hangar Row apron and runway 15-33. The feature consisted of one solid circle approximately thirty feet in diameter surrounded by a ring approximately sixty feet in diameter comprised of concrete panels. The compass rose was used by pilots to recalibrate their on-board compasses, a process known as compass swing. Pilots would taxi their planes across the airfield turf onto the center concrete circle, from where they could see the cardinal directions. The outer ring was probably marked to indicate true cardinal directions and the inner circle, magnetic cardinal directions. During World War II, the Navy built a larger compass rose in the eastern end of the airfield to accommodate larger aircraft.

Post-Historic and Existing Conditions: With advances in navigational technology, the compass rose fell out of use after World War II, but was not removed or altered. The labels indicating cardinal directions have apparently worn off.

Evaluation: Contributing

The municipal airport compass rose contributes to the historic character of the Floyd Bennett Field historic district landscape as a distinctive circulation feature of the municipal airport period. Aside from possible loss of navigational labels, the feature has remained intact since the end of the historic period.

C-20. Navy Compass Rose

Historic Condition: In c.1944, the Navy constructed a steel-reinforced concrete compass rose at the eastern edge of the airfield between taxiways 1 and 2 and taxiway 5. Unlike the earlier compass rose built by the city, the Navy's consisted of a solid circular concrete pad that probably had navigational markers painted on it, and a short taxiway connecting to taxiway 5. The use of solid concrete surfaces was necessary given the heavier weight of aircraft. The compass rose was used by pilots to recalibrate their on-board compasses, a process known as compass swing. Pilots would taxi their planes to the center of the circle from where they could see the cardinal directions.

Post-Historic and Existing Conditions: In c.1960 the Navy added a second short taxiway to the compass rose from taxiways 1 and 2. The navigational markings have apparently worn off.

Evaluation: Contributing

The Navy compass rose contributes to the historic character of the Floyd Bennett Field historic district landscape as a distinctive circulation feature of the World War II period. Aside from the loss of its navigational markings, the feature has remained intact since the end of the historic period.

C-21. Patrol Road

Historic Condition: The Navy built an asphalt-paved drive around the eastern and northern perimeter of the airfield in 1942 as part of its war-time expansion. This road began in Naval Aviation Patrol Base, proceeded through the ammunitions-communication area north of the airfield, and ended at Flatbush Avenue at the north service substation (117).

Post-Historic and Existing Conditions: In c.1951-52 as part of the Navy's Korean War improvements, the patrol road was partially removed for the expansion of the patrol base apron, and was realigned around the extensions and improved approaches to runways 1-19 and 12-30. The patrol road was also extended to Hangar Row at this time. In c.1980, the road became part of the North 40 Natural Area trail system (see C-23). Most of the asphalt surface of the patrol road north of runway 6-24 was either removed or covered with earth. The section of the patrol road within the ammunitions-communication area (North 40 Natural Area) is outside of the historic district.

Evaluation: Contributing

The patrol road contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the World War II period. The section north of runway 6-24, including the part in the approach to runway 15-33, does not retain its historic character due to removal or covering of the asphalt pavement. The setting of the road has been altered through the encroachment of vegetation.

C-22. Ground Control Approach Radar Facility

Historic Condition: Not applicable. The site of the ground control approach radar facility was open airfield during the historic period.

Post-Historic and Existing Conditions: In c.1953 during the Korean War, the Navy constructed a ground control approach (GCA) radar facility, consisting of a circuit of three curved road legs and a circular segment between, off the northwest side of the intersection of runways 1-19 and 6-24. It is not known if the facility contained any other built features. Only one of the three road legs remains.

Evaluation: Non-contributing

The ground control approach radar facility does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after 1945. The existing road is only a remnant of the original feature. Further research would be needed to document the original appearance and function of this feature.

C-23. North 40 Natural Area Trails

Historic Condition: During World War II, the navy built a perimeter patrol road that ran through the northern part of the airfield and the adjoining ammunitions-communication area.

Post-Historic and Existing Conditions: In c.1980, the park laid out a system of earthen trails in the young woods north of runway 6-24 in an area managed as the North 40 Natural Area. The system followed sections of the patrol road. The trailhead to this system, built at the mid-point of runway 6-24, includes wood bollards, signs, and garbage cans. Only a part of the trail system is within the historic district.

Evaluation: Non-contributing

The North 40 Natural Area trails do not contribute to the historic character of the Floyd Bennett Field historic district landscape. The patrol road does contribute, but not as part of this trail system (see C-21). The small-scale features within the trailhead along the runway 6-24 flight-path clear zone are compatible due to their small scale and temporary construction.

C-25. Aviation Patrol Base Access Road

See Naval Aviation Patrol Base Character Area.

C-28. Coast Guard Hangar Apron

See Coast Guard Air Station Character Area.

C-29. Coast Guard Taxiway

See Coast Guard Air Station Character Area.

Buildings and Structures Features

The Doppler radar tower at the southeastern edge of the airfield is not evaluated here because it is outside of National Park Service jurisdiction due to its location on a separate federal property belonging to the Federal Aviation Administration (U.S. Department of Transportation). Erected in 1998, the tower would be a non-contributing feature that detracts from the historic circulation patterns of the airfield due to its location with the flight-path clear zone for runway 12-30.

117. North Service Substation

Historic Condition: Building 117 was built in c.1942 as part of the Navy's World War II expansion of the airfield. Located along the patrol road near Flatbush Avenue at in the northwest approach to runway 12-30, the small one-story red-brick building with a concrete roof was part of the expanded electrical system,

probably used to service the communications towers and ammunitions magazines north of the airfield. Its materials matched those of the two brick powerhouses erected during the war at the Naval Aviation Patrol Base and marginal wharf.

Post-Historic and Existing Conditions: Since 1945, there appears to have been no substantial exterior changes to the north service sub-station aside from the possible installation of glass block in the window opening. Its setting has changed due to growth of woods on formerly open airfield.

Evaluation: Contributing

The north service substation (117) contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical utility building of the World War II period. Its exterior appears to be largely intact from the historic period, but it is now concealed by successional woods.

217. Liquid Oxygen Facility

Historic Condition: Not applicable. The site of building 217 was open airfield during the historic period.

Post-Historic and Existing Conditions: The Navy constructed building 217 within the clear-zone north of runway 1-19 and west of taxiway 6 in 1959. It is a one-story gable-roof building sided in corrugated metal, with low concrete walls extending from the side apparently used for supporting oxygen tanks. The building is surrounded by chain-link fence and young successional woods.

Evaluation: Non-contributing

The liquid oxygen facility does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after 1945. It is compatible with the historic character of the landscape due to its small scale and location outside of a flight-path clear zone and taxiway. The building reflects the continued use of the landscape for military purposes during the Cold War.

403. Jamaica Bay Bulkhead

Historic Condition: As part of the initial construction of the municipal airport that began in 1928, the city erected a sheet-pile bulkhead along the eastern and southern sides of the airfield in order to support the sixteen feet of fill used to build the airfield out of tidal estuary. The eastern side of the bulkhead bordered Jamaica Bay and the southern side addressed the grade change to Barren Island. The Coast Guard used the fill supported by this bulkhead to build its air station in 1936-37. In 1940, the Navy built a timber bulkhead along Jamaica Bay north of the original sheet-pile bulkhead as part of the development of the Naval Aviation Patrol Base. During the Navy's expansion during World War II, the timber bulkhead along the patrol base was extended north, and the southern side of the original airport bulkhead along Barren Island was either buried or removed as part of the construction of the main barracks area (South Administrative Area).

Additional areas of bulkhead were constructed to the south along the Jamaica Bay and Rockaway Inlet shorelines (outside of historic district). The Navy did not install a bulkhead along the Jamaica Bay and Mill Basin shorelines bordering the expansion north of the airfield.

Post-Historic and Existing Conditions: In 1952, the Navy added an extension to the timber bulkhead at the Naval Aviation Patrol Base to accommodate an expansion of the apron. In c.1960, the Navy built an additional timber bulkhead along Jamaica Bay for the extension of runway 6-24. At some point after 1972, stone rip-rap was added along the Jamaica Bay shoreline at the patrol base to stabilize the deteriorating bulkhead. The sheet-pile bulkhead along the former airport seaplane base has deteriorated extensively, allowing erosion of the fill behind it.

Evaluation: Non-Contributing

The Jamaica Bay bulkhead does not contribute to the historic character of the Floyd Bennett Field historic district landscape due to extensive deterioration and alteration. Although sections of the bulkhead continue to provide structural support for the Coast Guard Air Station and Naval Aviation Patrol Base, these areas have either been rebuilt or retrofitted with stone rip-rap.

404. New York Police Aviation Unit Guard Booth

Historic Condition: Not applicable. The site of the guard booth during the historic period was open airfield within the flight-path clear zone for runway 12-30.

Post-Historic and Existing Conditions: At the time of its relocation to the Coast Guard Air Station in 1998, the New York Police Aviation Unit built a small guard booth along the main access road south of the original Coast Guard property. The booth is a small white enclosure.

Evaluation: Non-Contributing

The New York Police Aviation Unit guard booth does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was added after the historic period. Although inconspicuous, the booth detracts from the historically open character of the airfield within the approach to runway 12-30.

405. Taxiway 6 Comfort Station

Historic Condition: Not applicable. The site of the comfort station was open airfield along taxiway 6 during the historic period.

Post-Historic and Existing Conditions: In 2000, the park constructed a comfort station along taxiway 6 to service adjoining Camps Tamarack and Goldenrod. The tan and brown building is built of recycled plastic and has a front-facing low-pitched gable roof and two restrooms. It is surrounded by mown grass and woods.

Evaluation: Non-contributing

The Camps Tamarack and Goldenrod comfort station does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. Its design, materials, and location directly along the taxiway detracts from the historic character of the landscape.

406. Runway 6-24 Comfort Station

Historic Condition: Not applicable. The site of the comfort station was open airfield during the historic period within the flight-path clear zone for runway 6-24.

Post-Historic and Existing Conditions: : In 2006, the park installed four pre-fabricated comfort stations manufactured by CXT Concrete Buildings, including one along runway 6-24 that serves the North 40 Natural Area and model airplane flying field on runway 1-19. The tan and brown building is built of recycled plastic and has a front-facing low-pitched gable roof and two restrooms.

Evaluation: Non-contributing

The runway 6-24 comfort station does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. Its design, materials, and location within the flight-path clear zone of runway 6-24 detracts from the historic character of the landscape.

Views and Vistas***VV-2. Runway Sight Lines***

Historic Condition: The city and Navy maintained each of the runways completed in 1930, 1935, and 1942 with clear sight lines that were critical for safe take offs and landings. These sight lines were primarily along the length of the runways, but also extending peripherally to adjoining runways and taxiways.

Post-Historic and Existing Conditions: After the runways ceased being used for aviation, some of the sight lines became obstructed, especially the peripheral ones from one runway to adjoining runways and taxiways. This was especially true in the northeast part of the airfield due to growth of woods on formerly open airfield, and on runway 12-30 where the Coast Guard erected fences and parked vehicles. The park's placement of earthen berms also partially blocked ground-level views down runways 1-19.

Evaluation: Contributing

The runway sight lines contribute to the historic character of the Floyd Bennett Field historic district landscape as character-defining features of the municipal and World War II periods. Although partially obstructed, most of the key views along the length of the runways remain intact. The loss of peripheral sightlines

from one runway to adjoining runways and taxiways detracts from the historic character of the landscape.

Constructed Water Features

CWF-1. North 40 Pond

Historic Condition: Not applicable. The site of the North 40 pond during the historic period was open airfield adjacent to the runway 12-30 northwest approach.

Post-Historic and Existing Conditions: In c.1980, the park constructed a small pond within a part of the airfield managed as the North 40 Natural Area. The pond was designed to enhance wildlife habitat and included a small photo shelter at its north end. The pond is surrounded by woods.

Evaluation: Non-contributing

The North 40 pond does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. The pond is compatible with the historically open and level quality of the airfield.

Small-Scale Features

SSF-1. Perimeter Fence

See Hangar Row Character Area.

SSF-7. Airfield Navigational and Utility Remnants

Historic Condition: During the historic period, the city and the Navy installed a variety of small-scale features within the airfield related to navigational aids and utility systems. The Navy removed and/or replaced most of the municipal airport's runway lighting system during the World War II expansion. No documentation has been found on the Navy's navigational lighting installed during World War II.

Post-Historic and Existing Conditions: In the years after the naval air station was decommissioned in 1971, most of the navigational lighting was apparently removed. The remaining small-scale features scattered across the airfield are remnants of either utility systems or navigational aids, such as an iron post near the airport compass rose. These features have not been inventoried for this report.

Evaluation: Unevaluated

The navigational and utility remnants within the airfield have not been evaluated due to lack of documentation on historic and existing conditions.

Archeological Features

A-1. Municipal Airport Seaplane Ramp Remnants

In c.1931, the city built a fifty-foot wide wood-pile seaplane ramp as part of plans for a seaplane base at the southeast corner of the airfield along Jamaica Bay. The ramp remained intact during World War II when the Navy developed the adjoining area into a boat basin. The ramp fell to ruin at some point between 1945 and 1972. The remnant piles are identified as feature JB-50 in “Cultural Resources Inventory of the Gateway National Recreation Area” (John Milner & Associates, 1978).

A-2. Municipal Airport Seaplane Pier Remnants

In c.1931, the city built an approximately 500-foot long wooden pier at its planned seaplane base at the southeast corner of the airfield along Jamaica Bay. The pier, which extended on alignment with the airport south boundary road, was intended for the docking of seaplanes that did not come ashore. It was partly located on the site of an earlier pier erected by the city in c.1918 as part of an unrealized major port development. This early pier was probably removed with initial construction of the airport in 1928-30 that extended out the Jamaica Bay shoreline. In c.1938, the city added a ramp to the east end of the seaplane pier. The Navy maintained the pier during World War II, and after the war gave it the designation of building/structure #141. At some point after 1972, the pier fell to ruin, leaving only the wood piles.

A-3. Navy Boat Basin Pier Remnants

In c.1942, the Navy built a wooden pier between the earlier airport seaplane ramp and seaplane pier along Jamaica Bay. The approximately 300-foot long pier, which featured four arms extending perpendicular to the main section, defined a boat basin, and was associated with a boat house (35) constructed on shore opposite the pier. At some point between 1945 and 1972, the boat basin pier fell into ruins, leaving only its wood piles.

NAVAL AVIATION PATROL BASE LANDSCAPE FEATURES

The Naval Aviation Patrol Base, developed between 1940 and 1945 with later additions during the Korean War, is the character area along the Jamaica Bay shoreline east of the airfield and north of the Coast Guard Air Station. This area encompasses the existing New York City Sanitation Department training area, the former Navy maintenance area that is partly within the area assigned to the New York City Police Aviation Unit, Hangar B housing the Historic Aircraft Restoration

Project (H.A.R.P.) and the surrounding concrete apron, seaplane ramp B, and a former Navy utility area north of the apron and east of taxiway 6. Overall, the Naval Aviation Patrol Base retains its World War II-period character as a cluster of development defining the eastern edge of the airfield. Significant features lost since 1945 include Hangar A, two frame barracks (24, 38), and three buildings within the maintenance area (92, 93, 95, 104). Features added after 1945 include the northern part of the apron that replaced a war-time storage yard, and the Navy utility area that includes five small buildings (168, 169, 173, 174, and 205), a scrap yard, and successional woods in the area north of the patrol base apron.

Natural Systems and Features

NS-1. Successional Woods

See Airfield Character Area.

NS-2. Jamaica Bay Beach

See Airfield Character Area.

Spatial Organization Features

SO-7. Naval Aviation Patrol Base Area

Historic Condition: On November 27, 1939 following the outbreak of war in Europe and President Roosevelt's resulting proclamation of the Limited National Emergency, the Navy publicized its plans for development of an air base at Floyd Bennett Field that would house seaplanes used to patrol the coast. Plans for the project, estimated to cost \$600,000, called for two large seaplane hangars to house two squadrons, offices, and workshops; storage for ammunition, and barracks for stationing 400 men. On January 18, 1940, the city granted a lease to the Navy for eighteen acres north of the Coast Guard Air Station for the new base, located outside of the flight-path clear zones for runways 12-30 and 6-24 (original). Construction of the first phase of the project began soon after the lease was signed. It included the apron and timber bulkhead, seaplane ramp, pier, three ammunition magazines, one seaplane hangar (Hangar A), and two frame barracks (24, 38), one for enlisted men, the other for bachelor officers. These features defined a rectangular space adjoining the Jamaica Bay shoreline. In 1942 after the Navy's acquisition of Floyd Bennett Field, it expanded the apron and built a second seaplane hangar (Hangar B, 100) and seaplane ramp (B, 174). The expansion extended the rectangular space to the north. The original limits of

the space defined by the flight-path clear zone for the original runway 6-24 were removed when the Navy converted that runway to a taxiway in 1942.

Post-Historic and Existing Conditions: In c.1952 during the Korean War, the Navy expanded the patrol base apron to the north by a third and added a number of small ammunition lockers around both hangars. In 1970, the Navy established NARDET (Naval Air Reserve Detachment) at the south half of the base including Hangar A, which was fenced off from the north half (current New York City Sanitation Department assigned area). At the same time, the Navy demolished the two frame barracks within NARDET and replaced them with a brick-faced barracks named Tylunas Hall (278). In 1998, the park demolished Hangar A.

Evaluation: Contributing

The Naval Aviation Patrol Base area contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining spatial feature of the municipal airport and World War II periods. The Korean War-period expansion of the apron, which did not include new buildings, is compatible with the historic character of the space and conveys its continued use during the Cold War. The loss of Hangar A and the two barracks, and the division of the area with fencing, detracts from the historic definition of the space. Despite this, the historic limits of the patrol base area is evident through the apron and Hangar B, while Tylunas Hall maintains some of the historic spatial definition along the south side.

SO-8. Maintenance Area

Historic Condition: In 1942, the Navy developed a complex of twelve utilitarian buildings (89-99, 104) along the west side of the Naval Aviation Patrol Base apron and coast Guard Air Station, bordering the east side of the airfield outside of the flight-path clear zone for runways 12-30, 1-19, and 6-24. The buildings were aligned with the main access road to the patrol base on the east and taxiway 5 on the west, creating an overall rectangular space with many smaller spaces between the individual buildings. The Navy used this area for ammunitions and supply storage, and also located the field's fire station and second power plant there.

Post-Historic and Existing Conditions: After 1945, the Navy added several small buildings to the area, but did not change its overall limits and spatial character. In c.1972, the south half of the area was fenced off as part of the expanded Coast Guard Air Station. After this time, several of the buildings were abandoned and four small buildings within the center of the maintenance area were demolished. These included World War II-era buildings 92, 93, 95, 104, and 126 and Cold War-period buildings 146 and 147. Building 260, a small filling station built in c.1964, was left standing. In c.2004, the New York City Police added a large temporary building (404) at the southwest corner, and a memorial garden at the southeast corner of the area. The garden consists of a central monument surrounded by hedges and a circular walk.

Evaluation: Contributing

The maintenance area contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining spatial feature of the World War II period. While the loss of four buildings and division of the space with fencing detracts from its historic character, overall major buildings, roads, and limits of the space remain intact. The police memorial garden, while inconspicuous in the overall maintenance area, is not compatible with the historic utilitarian character of the landscape.

SO-9. Taxiway 6 Utility Area

Historic Condition: Not applicable. The taxiway 6 utility area was undeveloped fill during the historic period.

Post-Historic and Existing Conditions: As part of the Korean War-era expansion of the Naval Aviation Patrol Base apron, the Navy relocated the World War II-era storage yard to the undeveloped area north of the apron outside the flight-path clear zone for runways 6-24 and 1-19. The new yard was a fence-enclosed rectangular space accessed off taxiway 6. At the same time, the Navy built two ammunitions magazines (168, 169) north of the yard and aligned with taxiway 6. In 1967, the Navy added two electrical utility buildings to the east of the magazines (273, 274), accessed via a short road off taxiway 6. A antennae or electrical component was mounted on a tall wood pole adjacent to building 273. These facilities formed a small developed area along the east side of taxiway 6. After 1972, the buildings were abandoned and the area became overgrown with woods. The storage yard is presently used as a towing service's lot (lot #3).

Evaluation: Non-contributing

The taxiway 6 utility area does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was developed after the historic period. The area has also lost its spatial character from the post-historic period due to growth of successional woods.

Vegetation Features***V-6. Tylunas Hall Plantings***

Historic Condition: In 1940, the Navy built two frame barracks (24, 38) along the southern side of the Naval Aviation Patrol Base. There was a small area of lawn surrounding these buildings and a parking lot to the east. There were most likely no foundation plantings around the buildings.

Post-Historic and Existing Conditions: In 1970, the Navy replaced the two frame barracks with a single brick-faced building, Tylunas Hall, as part of its NARDET (Naval Air Reserve Detachment) facility. Lawn was established around

the new building, and, at an undetermined date, plantings were added, including clipped privet hedge, fruit trees, and trees in planters. The lawn strip surrounding the adjoining parking area to the east was removed as part of an expansion of the lot.

Evaluation: Non-Contributing

The Tylunas Hall plantings do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they were added after the historic period. The ornamental character of the plantings is not compatible with the utilitarian character of the war-time landscape.

Circulation Features

C-21. Patrol Road

See Airfield Character Area.

C-24. Naval Aviation Patrol Base Apron

Historic Condition: In 1940, the Navy built a concrete apron extending west from Jamaica Bay as the first phase of development of the Naval Aviation Patrol Base. The apron provided circulation for seaplanes housed at Hangar A, and included a wood seaplane ramp. In 1942, the Navy doubled the size of the apron to accommodate Hangar B. A new concrete seaplane ramp was built at its north end. The new section of apron connected to taxiways 1 and 5.

Post-Historic and Existing Conditions: In 1952, the Navy added another concrete extension off the north side of the apron to accommodate jet aircraft, nearly doubling the area. The extension, which did not include a new hangar, connected to taxiway 6 by two short concrete taxiways. At some point after 1972, three turf areas along the west edge of the apron adjacent to Hangar A were paved over. In c.1970, the Navy erected a perimeter fence around the southern half of the apron surrounding Hangar A as part of its NARDET (Naval Air Reserve Detachment) facility, disrupting circulation between the two sections of apron. This fence presently serves as the boundary for the New York City Sanitation Department assigned area.

Evaluation: Contributing

The Naval Aviation Patrol Base apron contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the World War II period. The apron remains intact except for the Korean War-era extension, paving of the turf areas near Hangar A, and addition of the NARDET fence. The Korean War-era extension is compatible with the character of the historic apron and illustrates its adaptation for jet planes during the Cold War.

The New York Department of Sanitation fence detracts from the apron's historic circulation patterns.

C-25. Naval Aviation Patrol Base Access Road

Historic Condition: In 1940, the Navy built an asphalt road to provide access to the Naval Aviation Patrol Base then under construction. The road ran parallel to the Jamaica Bay shoreline and extended north from the airport south boundary road. The new road also provided access to the Coast Guard Air Station, which previously was accessed by a road that ran directly along the bulkhead from the airport seaplane base. With elimination of the airport south boundary road during the World War II-era expansion, the Navy tied the patrol base entrance road to the main road through the main barracks area (current Floyd Bennett Boulevard). At the same time, seven driveways were built on the west side of the road to access buildings in the maintenance area. The Navy also built a concrete sidewalk parallel to the west side of the access road.

Post-Historic and Existing Conditions: At some point after 1945, concrete curbs were built along parts of the road and street lights were installed. The original sidewalk appears to have been replaced by a new sidewalk integral with the curb. In c.1996, the New York City police added a gate and guard booth on the access road to control access to their facility at the former Coast Guard Air Station. Around the same time, the turf panels that separated the north end of the access road from the apron surrounding Hangar A were paved over, blurring the edges of the road.

Evaluation: Contributing

The Naval Aviation Patrol Base access road contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the municipal airport and World War II periods. The road retains its historic alignment, but has been altered through the addition of curbs and replacement of the sidewalk.

C-26. Tylunas Hall Parking Lots

Historic Condition: During World War II, the Navy built a small parking lot on the east side of the bachelor officers' quarters (38) within the Naval Aviation Patrol Base. The lot was south of the apron and accessed from a drive that ran along the bulkhead.

Post-Historic and Existing Conditions: The parking lot was retained following replacement of the frame barracks with Tylunas Hall in 1970. Subsequently, the surrounding lawn area was removed as part of an expansion of the parking lot, probably when the sanitation department moved into the building in 1998. A second parking lot was added on the west side of Tylunas Hall on the site of the barracks (24).

Evaluation: Non-Contributing

The Tylunas Hall parking lots do not contribute to the historic character of the Floyd Bennett Field historic district landscape because the west lot post-dates the historic period, and because the east lot does not retain its World War II-era character.

C-27. Maintenance Area Driveways

Historic Condition: As part of the development of the maintenance area in 1942, the Navy built seven driveways extending west from the main road to access the maintenance and storage buildings. Each driveway was built of asphalt and most wrapped around the buildings and/or led to small parking and loading areas.

Post-Historic and Existing Conditions: The driveways appear to retain their historic alignment. The driveways that accessed removed buildings (92, 93, 95, 126) remain. A detailed inventory of existing conditions was not completed for this evaluation.

Evaluation: Contributing

The maintenance area driveways contribute to the historic character of the Floyd Bennett Field historic district landscape as typical circulation features of the World War II period. Based on limited existing conditions documentation, it appears the driveways remain intact from their World War II condition.

Buildings and Structures Features***89, 90A-B, 91, 94, 96, 97, 98, 99, 178. Maintenance Area Buildings***

Historic Condition: During World War II, the Navy constructed fourteen buildings along the west side of the Naval Aviation Patrol Base that formed the field's primary maintenance area. Anchoring the north end was the largest building in the area, the general storehouse (98), a three-story concrete building with a flat roof, two four-story hoist towers, sheltered loading docks, and rectangular steel-frame windows. Off the southwest corner of the building was Power Plant B (96), a large brick building with a corbelled parapet and tall steel-frame windows. This was a duplicate of Power Plant A (86) located in the main barracks area near the marginal wharf (outside of historic district). South of general storehouse next to a miscellaneous storage building (104) was the cold storage and commissary (97), a flat-roofed brick and concrete building with a loading dock and minimal fenestration. South of this building was the torpedo storage building (94), a three-bay steel-frame and corrugated-metal sided structure with a central monitor and steel-frame window walls. To the south were four small buildings: a paint and oil storehouse (92) and a bombsight storage building (93), both one-story shed-roof buildings with extensive glazing; an ordinance overhaul shop (95), and a paint

storage building (126). No documentation was found on the historic appearance of these two buildings. Farther south was the station maintenance shop (91), a wide one-story building with a low gable roof; and the fire station and garage (90A-B), a large two-part building with an arched roof on the west part. There were also several small utility buildings within the complex, including a sewage pump station (89), and a fire pump station and water tank (99, 178; this higher number was added to the water tank after 1945).

Post-Historic and Existing Conditions: After 1945, the Navy added several small buildings to the complex: two public works storage buildings (146, 147), and the maintenance area filling station (260). Except for the filling station, these buildings and World War II-era buildings 92, 93, 95, 104, and 126 were removed after 1972. The park abandoned buildings 94 and 96, which today have lost much of their glazing and are open to the elements. Buildings 89, 90, 91, and 260 fall within the area presently assigned to the New York City Police Aviation Unit. The police added a large tent-like temporary building (407) at the southwest corner of the complex in c.2005. A detailed evaluation of the existing conditions and changes to these buildings since 1945 was not completed for this report.

Evaluation: Contributing

Buildings 89, 90A-B, 91, 94, 96, 97, 98, 99, and 178 contribute to the historic character of the Floyd Bennett Field historic district landscape as typical utility buildings of the World War II period. While 94 and 96 are in poor condition, they appear to remain largely intact on the exterior. Buildings 90A-B and 91, which are presently used by the New York City police, have had a number of details altered since 1945, but retain their overall massing. The filling station (260) and temporary police storage building (407) do not contribute because they were added after the historic period. The filling station is compatible due to its small scale and because it illustrates the continued military use of the site. The police temporary building detracts from the historic character of the landscape due to its large size, materials, and location within the flight-path clear zone for runway 12-30.

BS-100. Hangar B

Historic Condition: In 1942, the Navy constructed Hangar B, a duplicate of Hangar A completed in 1940. Hangar B was built approximately 450 feet north of Hangar A and slightly to the west, probably to provide additional space on the apron, which was used as a firing area with a test backstop along its northern edge. Hangar B was approximately 250 feet wide and 400 feet long, more than five times as big as the municipal airport hangars. The hangar was built of a clear-span trussed steel frame with angled skylights, sliding glazed doors on the north and south sides, and narrow one-story lean-tos on the other ends. Unlike the airport hangars, Hangar B was sided in sheet metal without architectural adornment. It was built according to a standard Navy design used for hangars at other air stations during the war. The standardized plan may have been designed by the

renowned industrial architect, Albert Kahn, who was a consultant to the military during World Wars I and II. Kahn's firm produced many of the building designs at naval installations, including air hangars.

Post-Historic and Existing Conditions: In 1951, the Navy enlarged the lean-to on the west side of the hangar. Seven small shed were also built around the periphery of the hangar in 1948, including line crew operators' buildings and a crew shelter (202, 203, 204); and inc.1952, a sonobuoy storage building (228) and three portable line storage sheds (241, 242, 248). By 1970, the Navy vacated Hangar B and concentrated its NARDET (Naval Air Reserve Detachment) facilities in the adjoining Hangar A. The peripheral sheds were removed after this time. The building remained vacant until c.1995, when the Historic Aircraft Restoration Project (H.A.R.P.) moved their operations into the building.

Evaluation: Contributing

Hangar B contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining building of the World War II period. The building remains intact except for the 1951 addition, which is compatible and conveys the building's continued use during the Korean War.

168, 169, 205, 273, 274. Taxiway 6 Utility Area Buildings

Historic Condition: Not applicable. The site of the utility area buildings was undeveloped fill east of taxiway 6 during the historic period.

Post-Historic and Existing Conditions: In c.1952 during the Korean War, the Navy built two ready ammunitions magazines(168, 169) parallel to the east side of taxiway 6 north of the Aviation Patrol Base apron. These were one-story rectangular concrete buildings with flat roofs and heavy steel doors. At the same time, the Navy fenced in a scrap yard to the south of the magazines, which included an open steel-frame shed with a corrugated steel roof. In 1967, the Navy built two small flat-roof brick-faced electrical utility buildings (273, 274) to the east of the ammunitions magazines. These buildings were abandoned after 1972 and became overgrown by vines and woods.

Evaluation: Non-contributing

The taxiway 6 utility area buildings do not contribute to the historic character of Floyd Bennett Field historic district landscape because they did not exist during the historic period. Although deteriorated and overgrown, the buildings are compatible with the historic character of the landscape and convey the continued use of the site during the time of the Korean and Vietnam Wars.

174. Seaplane Ramp B

Historic Condition: Seaplane ramp B was constructed in 1942 as part of the war-time expansion of the Aviation Patrol Base that included construction of Hangar B. The concrete ramp was approximately fifty feet wide and 300 feet long,

with concrete curbs and iron tie-ups. Seaplane ramp A, constructed at the same time and according to the same design, was built as part of a seaplane base along Rockaway Inlet (outside of historic district).

Post-Historic and Existing Conditions: Seaplane ramp B probably fell out of use by the jet age of the 1950s and 1960s that led to the decline of seaplanes. The park presently uses the ramp as a boat launch. It appears unchanged since its original construction aside from deterioration of the adjoining bulkhead and growth of woody vegetation on the apron.

Evaluation: Contributing

Seaplane ramp B contributes to the historic character of the Floyd Bennett Field historic district landscape as a character-defining structure of the World War II period. Although no longer used for its original purpose and not well maintained, the ramp appears to remain intact.

403. Jamaica Bay Bulkhead

See Airfield Character Area.

Small-Scale Features

SSF-8. Jet Engine Run-Up Stand

Historic Condition: Not applicable. The site of the jet engine run-up stand was undeveloped fill during the historic period.

Post-Historic and Existing Conditions: In c.1952 as part of the Korean War-era enlargement of the Naval Aviation Patrol Base, the Navy installed a jet engine run-up stand along the north side of the expanded apron. The stand consisted of a series of pre-cast concrete structures with angled pads facing south. The stand was abandoned after 1972 and is presently covered in vines.

Evaluation: Non-Contributing

The jet engine run-up stand does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it did not exist during the historic period. The stand is compatible with the historic character of the landscape due to its small scale. It conveys the adaptation of the Naval Aviation Patrol Base for use by jet aircraft during the Cold War.

Archeological Features

A-4. Hangar A Remnants

The Navy constructed Hangar A in 1940 as the first of two seaplane hangars in the Naval Aviation Patrol Base. Hangar A was a match of Hangar B, which still stands.

In 1998, the above-ground part of Hangar A was demolished to provide room for the New York City Sanitation Department's training area. Remnants of Hangar A visible today include the concrete floor (an extension of the surrounding apron), cut-off steel structural members, and the tracks for the sliding doors. The footprint of the building is clearly visible.

A-5. Hangar A Seaplane Ramp Remnants

The Navy constructed a timber seaplane ramp in 1940 as part of its initial development of the Naval Aviation Patrol Base that included Hangar A. A larger concrete seaplane ramp was built along with Hangar B during expansion of the base in World War II. This timber ramp was abandoned after World War II and its deck was removed prior to 1972. Today, wood piles from the ramp remain along the shoreline.

A-6. Naval Aviation Patrol Base Pier Remnants

As part of the initial development of the Aviation Patrol Base in 1940, the Navy built a wooden boat pier near the barracks at the south edge of the base. At some point between 1945 and 1972, the pier was removed except for the wooden piles. Some of the piles remain visible today along the shoreline.

COAST GUARD AIR STATION CHARACTER AREA

The Coast Guard Air Station, initially built in 1936-1937 and expanded during the World War II, is the character area along the Jamaica Bay shoreline between the airfield on the south (former airport seaplane base) and the Naval Aviation Patrol Base on the north. This character area encompasses only the original twelve-acre Coast Guard Air Station Brooklyn property and not the area leased from the Navy in c.1948, or the areas along runway 12-30 and the patrol base maintenance area that were transferred from the Navy to the Coast Guard in 1972. This larger Coast Guard property including the original twelve-acre property is presently assigned to the New York City Police Aviation Unit. The Coast Guard Air Station retains its original buildings, the main hangar and garage, and its associated apron and taxiway that were enlarged during World War II. Features lost since 1945 include a two-story frame barracks and a boat pier constructed in c.1943. The Coast Guard added a number of secondary buildings, structures, vegetation, and small-scale features after 1945. Inventory of existing conditions was limited due to restricted public access to the area.

Natural Systems and Features

NS-1. Jamaica Bay Beach

See airfield character area.

Spatial Organization Features

SO-10. Coast Guard Air Station Area

Historic Condition: The Coast Guard Air Station area was initially developed as a distinct space along the edge of the airfield in 1936-1937. The air station was established when the city entered into a fifty-year lease with the Coast Guard on July 9, 1936 for a ten-acre, 650-foot square parcel that had probably been bulkheaded and filled by the time of the lease as part of the city's unexecuted plans for expanding the adjoining airport seaplane base. After initial work on seeding the sandy soil, construction began on the hangar, located in the center of the site and the garage at the northwest corner, both completed in 1937. At the time, the buildings were surrounded by the open space of the airfield. Within the air station, the area to the north of the hangar contained the support buildings, while the area to the south containing the apron and taxiway was open. The Navy's development of the Naval Aviation Patrol Base in 1940, with two barracks bordering the northern boundary of the Coast Guard Air Station, established a northern edge to the area. During World War II, the Navy's development of the maintenance area along the west side, and fuel tanks to the south in the former airport seaplane base further defined the spatial limits of the air station. While the area spatially became part of a larger cluster of development lining the Jamaica Bay shore at the eastern edge of the airfield, the Coast Guard reinforced the distinction of its campus through a unified architectural style employing white concrete buildings in the Moderne style.

Post-Historic and Existing Conditions: After 1945, the Coast Guard built several new buildings, but maintained the spatial organization of the secondary buildings to the north of the hangar and open space to the south. In c.1950, the Coast Guard expanded the area of the air station by extending the apron to the south onto land leased from the Navy. The northern edge of the air station was altered through the Navy's replacement of the two frame barracks with Tylunas Hall in 1970 and the Coast Guard's replacement of its barracks in 1973. In c.1972, the Coast Guard fenced in its enlarged area to the south of the original parcel, to the west within the maintenance-storage area, and along runway 12-30. This fencing blurred the spatial distinction of the original ten-acre parcel.

Evaluation: Contributing

The Coast Guard Air Station area contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining spatial characteristic of the municipal airport and World War II periods. The limits of the area have been blurred through the loss of the Navy barracks to the north, fuel tanks to the south, and the addition of perimeter fencing of the enlarged area. Despite this, the spatial organization within the air station, consisting of a central hangar with support buildings to the north unified by a common architectural style, remains largely intact.

Vegetation Features

V-7. Coast Guard Hangar Plantings

Historic Condition: Soon after completion of its hangar in 1937, the Coast Guard established ornamental plantings along the north, east, and west sides. These plantings consisted of a lawn strip with clipped hedges along the foundations and a row of deciduous trees along a parking area to the west. The remainder of the site was mown grass without trees.

Post-Historic and Existing Conditions: At some point after 1972, probably at the time the new barracks (Edwards Hall) were constructed in 1973, a number of specimen trees and shrubs were planted in the area to the north of the hangar. The original plantings around the hangar were probably replaced during this time.

Evaluation: Unevaluated

The U.S. Coast Guard hangar plantings are not evaluated due to lack of documentation of historic and existing conditions. It appears that the hedge along the north front of the hangar is an original feature, but it is not known if the species and location has been changed. Most of the specimen trees and shrubs in the lawn area north of the hangar were probably planted after 1945. These trees detract from the historically open spatial character of the landscape.

Circulation Features

C-28. Coast Guard Apron

Historic Condition: As part of the initial development of the air station in 1936-1937, the Coast Guard built a concrete apron extending south from the hangar. This apron tapered in width and terminated in a half hexagon. The apron was crossed from east to west by a concrete taxiway on axis with the seaplane ramp. During World War II, the Coast Guard expanded the apron to the east and west, creating a large rectangular paved area that subsumed part of the taxiway.

Post-Historic and Existing Conditions: In c.1950, the Coast Guard expanded the apron to the south onto land leased from the Navy. This expanded apron

accommodated a nose hangar. Aside from repaving, no substantial changes were made to the apron after this time.

Evaluation: Contributing

The Coast Guard apron contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the World War II period. The original limits of the apron completed in 1937 are not visible. The non-historic c.1950 expansion is a compatible addition that reflects continued use of the air station during the Cold War.

C-29. Coast Guard Taxiway

Historic Condition: As part of the initial development of the air station in 1936-1937, the Coast Guard built a concrete taxiway extending west from the seaplane ramp to the apron. In c.1940, the taxiway was extended farther west to the access drive to the Naval Aviation Patrol Base. During World War II, the taxiway was extended into the airfield to taxiway 5 to access the runways.

Post-Historic and Existing Conditions: At some point between 1945 and c.1960, the Coast Guard or the Navy built a spur off the taxiway within the airfield to connect to runway 12-30. This spur was labeled as "GCA" on a 1960 plan of the field, indicating it was part of a Ground Control Approach system. Aside from repaving, no substantial changes were made to the taxiway after this time. The New York City Police placed concrete barriers across the taxiway at the entrance road in c.1998, blocking its historic circulation pattern.

Evaluation: Contributing

The Coast Guard taxiway contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical circulation feature of the World War II period. The original limits of the taxiway completed in 1937 are not visible due to the expanded apron. The non-historic spur to runway 12-30 is a compatible addition that reflects continued aviation uses during the Cold War. The concrete barriers detract from the taxiway's historic character.

C-30. Coast Guard Roads

Historic Condition: As part of the initial development of the air station in 1936-1937, the Coast Guard built several roads within the air station to access the buildings. The main entrance road ran along the Jamaica Bay bulkhead, extending from the road within the airport seaplane base to the south, which in turn connected to Flatbush Avenue and Hangar Row via the road along the south boundary of the airfield. Within the air station, the road turned west to access the garage, and two spurs ran along the east and west sides of the hangar. The east road contained a small parking area, and another small parking area was built off the east road in c.1938. During World War II, the Coast Guard extended the main

access road along the bulkhead north to the roads within the Naval Aviation Patrol Base.

Post-Historic and Existing Conditions: Since the historic period, several additions and minor changes in alignment were made to the Coast Guard roads. The original access road along the bulkhead was partly removed with construction of the new barracks (Edwards Hall) in 1972. The road in front of the north entrance to the hangar was widened into an oval to form a small parking area and plaza for a flagstaff in c.1973; and driveways were built to access a storage building constructed in 1959 and a police storage building added in 2004. A new road with diagonal parking was also built along the northern boundary of the site at an undetermined date after 1972.

Evaluation: Contributing

The Coast Guard roads contribute to the historic character of the Floyd Bennett Field historic district landscape as typical circulation features of the municipal airport and World War II periods. While there have been several modifications to the roads since 1945, overall the system remains intact. The road and parking along the northern boundary detracts from the historic character of the landscape.

Buildings and Structures Features

CG-1. Coast Guard Hangar

Historic Condition: The main building in the original development of the Coast Guard Air Station was the hangar, built in 1936-37 by private contractors, Graves and Quinn Corporation. The hangar, which at 161 by 182 feet was substantially larger than the 120- by 140-foot airport hangars, featured an innovative steel-frame barrel vaulted roof with glazed sliding doors facing south, one-story lean-tos on the east and west sides, and a two-story wing along the north side housing offices and barracks. The hangar was designed in the Moderne style with strong horizontal lines and white-painted concrete walls, in stark contrast to the standard architectural style of the earlier airport buildings. Moderne-style details included octagonal projections on the one-story side lean-tos, horizontal parapets, unadorned concrete (stucco) walls, and bands of windows with horizontal divisions. The parapet over the hangar doors featured the Coast Guard insignia in bas-relief, and the parapet over the main entrance on the two-story office wing also featured the insignia but set within stylized wings. On the roof of the hangar was an illuminated north arrow and name "U.S. Coast Guard." The building was not substantially changed during World War II, when it was used for the storage and testing of Sikorsky helicopters.

Post-Historic and Existing Conditions: In 1964, a small one-story communications wing was built on the east side of the hangar, and in 1969, a similar addition, called the avionics wing, was built on the west side. At some

point, glazing on the hangar doors was removed or covered, and the windows on the lean-tos and office wing were replaced. After c.1998, the Coast Guard insignia was removed from above the hangar doors and the Coast Guard name was painted over as part of the change in tenants to the New York City Police Aviation Unit.

Evaluation: Contributing

The Coast Guard hangar contributes to the historic character of the Floyd Bennett Field historic district landscape as a defining building of the municipal airport period. The style of the building reflects its origin as part of the distinct Coast Guard Air Station Brooklyn. Although some of its details have been altered, overall the building retains its historic character.

CG-2. Coast Guard Garage

Historic Condition: The second building in the original development of the Coast Guard Air Station was a six-bay garage built by the same private contractors as the hangar, Graves and Quinn Corporation, in 1936-1937. The garage, although much simpler than the hangar, was designed in the same Moderne style with white concrete walls, flat roof, and horizontal bands below the parapet.

Post-Historic and Existing Conditions: No changes to the mass and footprint of the garage occurred after 1945. Changes in the building's details were not inventoried for this report.

Evaluation: Contributing

The Coast Guard garage contributes to the historic character of the Floyd Bennett Field historic district landscape as a typical building of the municipal airport period. The style of the building reflects its origin as part of the distinct Coast Guard Air Station Brooklyn. The building appears to remain largely unaltered since the end of the historic period.

CG-3. Edwards Hall

Historic Condition: Not applicable. The site of Edwards Hall was an open area long the bulkhead of the Coast Guard Air Station. West of this site was a two-story frame barracks erected in c.1943 during World War II.

Post-Historic and Existing Conditions: In 1972, the Coast Guard demolished its World War II-era barracks and began construction on a new barracks building paralleling the bulkhead along Jamaica Bay. The concrete-frame building, which did not continue the white concrete wall/Moderne style standard of the air station, is rectangular in plan, with a central three-story section and flanking one-story wings. Balconies line the second and third floors on the west façade. The New York Police Aviation Unit currently uses the building for office space.

Evaluation: Non-Contributing

Edwards Hall, a former Coast Guard barracks, does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built

after the historic period. The building detracts from the historic architectural unity of the air station.

CG-7. South Pyro Locker

Historic Condition: Not applicable. The site of the south pyro locker was an open area along the Jamaica Bay bulkhead during the historic period.

Post-Historic and Existing Conditions: In c.1955, the Coast Guard built a small ammunitions locker along the Jamaica Bay bulkhead across from the hangar. No documentation is available on its original construction.

Evaluation: Non-Contributing

The south pyro locker does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was added after the historic period. It is a minor building that does not detract from the historic character of the landscape and illustrates continued military use during the Cold War.

CG-8. Paint Locker

Historic Condition: Not applicable. The site of the paint locker was open turf to the north of the hangar during the historic period.

Post-Historic and Existing Conditions: In 1959, the Coast Guard built a small building as a paint locker in the lawn area north of the hangar. No documentation is available on its original or existing condition.

Evaluation: Non-Contributing

The paint locker does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was added after the historic period. It is a minor building that does not detract from the historic character of the landscape and illustrates continued military use during the Cold War.

CG-12. Transformer Vault

Historic Condition: In c.1943, the Coast Guard built a small transformer vault in the lawn area to the north of the hangar. The vault may have been constructed as part of the barracks going up to the east at the same time. The transformer vault was probably a white-painted concrete building with a flat roof, matching the overall style of the hangar and garage.

Post-Historic and Existing Conditions: No documentation is available on changes to the transformer vault after the historic period. The building appears to retain its original massing and footprint.

Evaluation: Unevaluated

Insufficient documentation is available to evaluate the transformer vault. If it retains its historic character, it should be considered a contributing feature

that reflects war-time improvements to the air station and the Coast Guard's continuation of a unified architectural style.

CG-13. Storage Building

Historic Condition: Not applicable. The site of the storage building was open turf north of the garage during the historic period.

Post-Historic and Existing Conditions: In 1959, the Coast Guard erected a large one-story storage building at the northwest corner of the air station, adjoining the garage. The concrete building has a flat roof and is painted white.

Evaluation: Non-Contributing

The storage building does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. The building is compatible with the historic character of the landscape because it reflects a later interpretation of the standard architectural style used by the Coast Guard.

CG-400. Coast Guard Seaplane Ramp and Helicopter Pad

Historic Condition: As part of the original development of the air station in 1936-37, the Coast Guard built a seaplane ramp that extended into Jamaica Bay at the southeast corner of the property, on axis with a taxiway leading to the hangar apron. The seaplane ramp was constructed of wood and measured approximately fifty feet wide and 260 feet long.

Post-Historic and Existing Conditions: In c.1955, the Coast Guard rebuilt the seaplane ramp in concrete, and added a square level area at its upper part adjoining the bulkhead as a helicopter landing pad.

Evaluation: Non-Contributing

The Coast Guard seaplane ramp and helicopter pad does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. The ramp is compatible with the historic character of the air station because it is on the site of an earlier seaplane ramp and reflects the continued use of seaplanes and helicopters during the Cold War.

CG-401. Finger Pier and Boathouse

Historic Condition: Not applicable. The site of the finger pier and boathouse was open water and beach during the historic period. A wood boat pier built in c.1943 was located approximately 100 feet to the south.

Post-Historic and Existing Conditions: At some point between 1960 and 1965, the Coast Guard removed the World War II-period boat pier and built a new pier near the northern boundary of the air station. The new pier was also wood, and

featured two perpendicular sections (fingers). In 1969, a small boathouse was built at the foot of the pier on its north side.

Evaluation: Non-Contributing

The finger pier and boathouse do not contribute to the historic character of the Floyd Bennett Field historic district landscape because they were built after the historic period. The pier is compatible with the historic character of the landscape because it replaced a similar pier erected to the south during the historic period.

CG-402. New York City Police Equipment Building

Historic Condition: Not applicable. The site of the equipment building was open turf north of the hangar and west of the barracks during the historic period.

Post-Historic and Existing Conditions: In 2004, the New York City Police constructed an equipment building. The building consists of a lower section bordered on the east and south sides by taller sections apparently built of stacked modular units. These sections are used as a training facility.

Evaluation: Non-Contributing

The New York Police equipment building does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic period. In design, materials, scale, and location, the building detracts from the historic character of the Coast Guard Air Station landscape.

403. Jamaica Bay Bulkhead

See airfield character area.

Constructed Water Features

CWF-2. Swimming Pool

Historic Condition: Not applicable. The site of the swimming pool was within the footprint of a two-story frame barracks built in 1943. The Coast Guard maintained a recreation area including a baseball field in the open ground west of the hangar during the historic period.

Post-Historic and Existing Conditions: In 1972, the Coast Guard demolished the frame barracks and built a new barracks (Edwards Hall) to the east of the site along the Jamaica Bay bulkhead. In 1979, the Coast Guard built a swimming pool within the footprint of the demolished barracks. The pool included a small pool house and a concrete terrace surrounding the pool. The pool is empty and has not been used since c.1998. The terrace and pool bottom are covered in weeds.

Evaluation: Non-Contributing

The swimming pool does not contribute to the historic character of the Floyd Bennett Field historic district landscape because it was built after the historic

period. In design, materials, and location, it detracts from the historic character of the landscape.

Small-Scale Features

SSF-9. Coast Guard Flagstaff

Historic Condition: Not applicable. The site of the flagstaff during the historic period was turf in front of the barracks built in 1943, adjoining the east-west road through the air station.

Post-Historic and Existing Conditions: In c.1973 following demolition of the frame barracks, the Coast Guard erected a steel flagstaff on axis with the north entrance to the hangar, on the north side of the east-west road. As part of this installation, the road in front of the hangar was widened into an oval, symmetrical with the flagstaff and hangar entrance walk.

Evaluation: Non-Contributing

The Coast Guard flagstaff does not contribute to the historic character of Floyd Bennett Field historic district landscape because it did not exist during the historic period. Although there is no record of a flagstaff on the site historically, the existing flagstaff is compatible with the historic character of the landscape because it is a feature typically found at federal government installations.

SSF-10. Coast Guard Monument

Historic Condition: Not applicable. The site of the Coast Guard monument during the historic period was open turf between the garage and hangar.

Post-Historic and Existing Conditions: At some point between 1955 and 1959, the Coast Guard erected a pyramidal stone monument in the lawn area east of the storage building erected around the same time. No documentation on the purpose of the monument was inventoried for this report.

Evaluation: Non-Contributing

The Coast Guard monument does not contribute to the historic character of Floyd Bennett Field historic district landscape because it was added after the historic period. Because of its small scale and association with the Coast Guard, the monument appears to be compatible with the historic character of the landscape. Further documentation is needed to assess other values associated with the monument.

Archeological Features

A-7. Coast Guard Pier Remnants

During World War II, the Coast Guard built a wood boat pier on axis with the road that ran east-west to the north of the hangar. This pier was probably abandoned when the Coast Guard built a new finger pier farther north at some point between 1960 and 1965. The wood piles from the old pier remain along the shoreline.

Table 3.1

FLOYD BENNETT FIELD HISTORIC DISTRICT**LANDSCAPE FEATURES EVALUATION SUMMARY** (Keyed to Drawing 3.1)

FEATURE CODE	FEATURE NAME (LCS NUMBER)	EVALUATION	DATE CONSTRUCTED
HANGAR ROW			
Natural Systems and Features (no associated features)			
Spatial Organization			
SO-1	Hangar Row	Contributing	1929-1942
SO-2	Maintenance-Barracks Area	Contributing	1931-1945
SO-3	Aviator Sports Fields	Non-contributing	c.2005
Land Use (no associated features)			
Cluster Arrangement (no associated features)			
Topography (no associated features)			
Vegetation (no associated features)			
Circulation			
C-1	Airport South Boundary Road	Contributing	c.1930
C-2	Hangar Row Apron	Contributing	1930, 1935
C-3	World War II Entrance Road	Contributing	1942
C-4	Aviation Road	Contributing	1942, c.1951, 1996
C-5	Hangar Row Apron Parking Lots	Non-Contributing	c.1996, 2006
Buildings and Structures			
3, 4, 5, 6	Hangars 1-2, 3-4, 5-6, 7-8; 08271-08274	Contributing	1930, 1934-1937
26	Dope Shop 08275	Contributing	1937
30	Sewage Ejector Pump House	Contributing	c.1931
44	Ammunition Locker	Contributing	c.1942
50	Fire House	Contributing	1942
54	Synthetic Training Building	Contributing	1942
57	South Transformer Vault, 08284	Contributing	c.1932
120	North Transformer Vault, 08285	Contributing	1938
126	Paint Storage Building	Non-Contributing	c.1944
401	Hangar Row Comfort Station	Non-Contributing	2006
402	Aviator Sports Chiller Building	Non-Contributing	2005
Constructed Water Features (no associated features)			
Small-Scale Features			
SSF-1	Perimeter Fence	Contributing	1941, 1942, c.2000
Archeological Features (no associated features)			
AIRPORT ENTRANCE			
Natural Systems and Features (no associated features)			
Spatial Organization			
SO-4	Airport Entrance Area	Contributing	1930-35
Land Use (no associated features)			
Cluster Arrangement (no associated features)			
Topography (no associated features)			

Vegetation			
V-1	Central Lawn and Sycamore Trees	Contributing	c.1932, 1935
V-2	Admin. Building Foundation Plantings	Non-Contributing	c.1935, post-1972
V-3	South Lawn	Non-Contributing	c.1996
Circulation			
C-6	Airport Entrance Drives	Contributing	c.1932
C-7	Airport Entrance Walks	Contributing	c.1932
C-8	Airport Entrance Central Parking Lot	Contributing	c.1932
C-9	Airport Entrance North Parking Lot	Contributing	c.1932
C-10	Gateway-Rockaway Grnway Bikepath	Non-Contributing	c.2004
Buildings and Structures			
1	Administration Building (Ryan V.C.)	Contributing	1931
29	Fire Pump House	Contributing	1938
145	Beacon Tower	Non-contributing	1957
Views and Vistas			
VV-1	Control Tower View	Contributing	1931
Constructed Water Features (no associated features)			
Small-Scale Features			
SSF-2	Airport Entrance Light Standards	Non-contributing	c.2000
SSF-3	Airport Entrance Flagpole	Contributing	1935
SSF-4	Airport Entrance Sign	Contributing	1935/2006
SSF-5	Airport Entrance Furnishings	Non-contributing	c.2000
SSF-6	Airport Entrance Fence	Non-contributing	c.2000
Archeological Features (no associated features)			
AIRFIELD			
Natural Systems and Features			
NS-1	Successional Woods	Non-contributing	Post-1972
NS-2	Jamaica Bay Beach	Contributing	1928-1945+
Spatial Organization			
SO-5	Airfield	Contributing	1928-30, 1942
SO-6	Cricket Field	Non-contributing	c.2000
Land Use (no associated features)			
LU-1	Airfield Campgrounds	Non-contributing	c.1974
LU-2	Floyd Bennett Community Gardens	Non-contributing	c.1980
LU-3	Model Airplane Flying Field	Non-contributing	c.1980
LU-4	North 40 Natural Area (part)	Non-contributing	c.1980
Cluster Arrangement (no associated features)			
Topography			
T-1	Berms	Non-contributing	c.1996
Vegetation			
V-4	Airfield Grasslands	Non-contributing	c.1985
V-5	Ecology Village Pine Plantation	Non-contributing	c.1974
Circulation			

C-4	Aviation Road	Contributing	1942, c.1951, c.1996
C-11	Runway 15-33 (Public Entrance Road)	Contributing	1930
C-12	Runway 1-19	Contributing	1935, 1942, c.1951
C-13	Runway 12-30	Contributing	1935, 1942
C-14	Runway 6-24	Contributing	1942, c.1960
C-15	Hangar Row Taxiways	Contributing	1935
C-16	Taxiways 1 and 2 (Former runway 6-24)	Contributing	1930
C-17	WWII Taxiway System (Taxiways 3-6)	Contributing	1942
C-18	Taxiway 8	Non-contributing	c.1960
C-19	Municipal Airport Compass Rose	Contributing	1935
C-20	Navy Compass Rose	Contributing	c.1944
C-21	Patrol Road	Contributing	1942, c.1951-52
C-22	Ground Control Approach Radar Fac.	Non-contributing	c.1953
C-23	North 40 Natural Area Trails	Non-contributing	c.1980
C-28	Coast Guard Hangar Apron (part)	Contributing	1937, c.1943, c.1955
C-29	Coast Guard Taxiway (part)	Contributing	1937, c.1943
Buildings and Structures			
117	North Service Substation	Contributing	c.1942
217	Liquid Oxygen Facility	Non-contributing	1959
403	Jamaica Bay Bulkhead	Non-contributing	1928, 1940, 1942, 1952, 1960
404	NYPD Aviation Unit Guard Booth	Non-contributing	c.1998
405	Taxiway 6 Comfort Station	Non-contributing	2000
406	Runway 6-24 Comfort Station	Non-contributing	2006
Views and Vistas			
VV-2	Runway Sight Lines	Contributing	1930, 1935, 1942
Constructed Water Features			
CWF-1	North 40 Pond	Non-contributing	c.1980
Small-Scale Features			
SSF-1	Perimeter Fence	Contributing	1941, 1942, c.2000
SSF-7	Airfield Navigational/Utility Remnants	Unevaluated	Undetermined
Archeological Features			
A-1	Mu. Airport Seaplane Ramp Remnants	Unevaluated	c.1931
A-2	Muni. Airport Seaplane Pier Remnants	Unevaluated	c.1931
A-3	Navy Boat Basin Pier Remnants	Unevaluated	c.1942
NAVAL AVIATION PATROL BASE			
Natural Systems and Features			
NS-1	Successional Woods	Non-contributing	Post-1972
NS-2	Jamaica Bay Beach	Contributing	1928-1945+
Spatial Organization			
SO-7	Naval Aviation Patrol Base Area	Contributing	1940, 1942, c.1952
SO-8	Maintenance Area	Contributing	1942-1945

SO-9	Taxiway 6 Utility Area	Non-contributing	1952-1967
Land Use (no associated features)			
Cluster Arrangement (no associated features)			
Topography (no associated features)			
Vegetation			
V-6	Tylunas Hall Plantings	Non-contributing	c.1970
Circulation			
C-21	Patrol Road	Contributing	1942
C-24	Naval Aviation Patrol Base Apron	Contributing	1940, 1942, c.1952
C-25	Naval Aviation Patrol Base Access Road	Contributing	1940, 1942
C-26	Tylunas Hall Parking Lots	Non-contributing	c.1942, c.1998
C-27	Maintenance Area Driveways	Contributing	c.1942
Buildings and Structures			
89	Sewage Pumping Station 'B'	Contributing	c.1942
90 A-B	Fire Station and Garage	Contributing	c.1942
91	Station Maintenance Shop	Contributing	c.1942
94	Torpedo Storage	Contributing	c.1942
96	Power Plant 'B'	Contributing	c.1942
97	Cold Storage and Commissary	Contributing	c.1942
98	General Storehouse	Contributing	c.1942
99	Fire Pump Station	Contributing	c.1942
100	Hangar B	Contributing	c.1942
168	Ready Ammunition Magazine	Non-contributing	c.1952
169	Ready Ammunition Magazine	Non-contributing	c.1952
174	Seaplane Ramp B	Contributing	c.1942
178	Pumping Station Water Storage Tank	Contributing	c.1942
205	Storage Yard Shed/Fuel Station	Non-contributing	c.1952
260	Maintenance Area Filling Station	Non-contributing	c.1964
273	Remote Revr. Building	Non-contributing	1967
274	Generator Building	Non-contributing	1967
403	Jamaica Bay Bulkhead	Non-contributing	1928, 1940, 1942, 1952, 1960
407	NYPD Temporary Building	Non-contributing	c.2005
Views and Vistas (no associated features)			
Constructed Water Features (no associated features)			
Small-Scale Features			
SSF-8	Jet Engine Run-Up Stand	Non-contributing	c.1952
Archeological Features			
A-4	Hangar A Remnants	Unevaluated	1940
A-5	Hangar A Seaplane Ramp Remnants	Unevaluated	1940
A-6	Naval Aviation Patrol Base Pier Remnants	Unevaluated	1940

COAST GUARD AIR STATION			
Natural Systems and Features			
NS-2	Jamaica Bay Beach	Contributing	1928-1945+
Spatial Organization			
SO-10	Coast Guard Air Station Area	Contributing	1937, 1942-43, c.1950, c.1972
Land Use (no associated features)			
Cluster Arrangement (no associated features)			
Topography (no associated features)			
Vegetation			
V-7	Coast Guard Hangar Plantings	Unevaluated	c.1938, post-1945
Circulation			
C-28	Coast Guard Apron	Contributing	1937, c.1943, c.1955
C-29	Coast Guard Taxiway	Contributing	1937, c.1943
C-30	Coast Guard Roads	Contributing	1937, c.1943, post-1972
Buildings and Structures			
CG-1	Coast Guard Hangar	Contributing	1937, 1964, 1969
CG-2	Coast Guard Garage	Contributing	1937
CG-3	Edwards Hall	Non-contributing	1972
CG-7	South Pyro Locker	Non-contributing	c.1955
CG-8	Paint Locker	Non-contributing	1959
CG-12	Transformer Vault	Unevaluated	c.1943
CG-13	Storage Building	Non-contributing	1959
CG-400	Coast Guard Seaplane Ramp and Helicopter Pad	Non-contributing	c.1955
CG-401	Finger Pier and Boathouse	Non-contributing	c.1965, 1969
CG-402	New York Police Equipment Building (with temporary training tower)	Non-contributing	2004
403	Jamaica Bay Bulkhead	Non-contributing	1928, 1940, 1942, 1952, 1960
Views and Vistas (no associated features)			
Constructed Water Features			
CWF-2	Swimming Pool	Non-contributing	1979
Small-Scale Features			
SSF-9	Coast Guard Flagstaff	Non-contributing	c.1973
SSF-10	Coast Guard Monument	Non-contributing	c.1959
Archeological Features			
A-7	Coast Guard Pier Remnants	Unevaluated	c.1943

B. EVALUATION OF AREAS OUTSIDE HISTORIC DISTRICT (DRAWING 3.1)

The following evaluation of the landscape outside of the proposed expanded historic district corresponds to most of the North 40 Natural Area to the north of the district, and the South Administrative Area to the south. The evaluation is organized according to landscape characteristics within these two areas. Each characteristic evaluation provides a summary evaluation based on conditions during the period of significance for the historic district (1929-1945) and existing conditions (2008) to indicate change over time in the landscape. Each characteristic includes a list of extant associated features that are keyed to the analysis and evaluation plan (Drawing 3.1).

NORTH 40 NATURAL AREA

The North 40 Natural Area evaluated here corresponds to the historic limits of the Navy ammunitions-communication area outside of the flight-path clear zones for runways 1-19, 15-33, and 6-24. There was limited documentation available on historic and existing conditions within this area. While the area was well documented on Navy plans, no historic photographs were found aside from aerial views. Inventory of existing conditions was limited due to dense vegetation that prevented access to the ammunition magazines and radio tower sites. Despite the lack of documentation, the loss of three buildings, four prominent radio towers, and change from open field to dense woods has led to loss of the landscape's historic World War II-period character.

Natural Systems and Features

Historic Condition: During the historic period, the North 40 Natural Area was tidal estuary along Irish Channel and Mill Basin that was filled by 1942 for development of the Navy's ammunitions-communication area. The fill was most likely not managed as mown turf except around the buildings.

Post-Historic and Existing Conditions: After 1945, grasses and low scrub became established in the ammunitions-communication area, but the vegetation was kept low overall in order to maintain sight lines from the airfield. After decommissioning of NAS New York in 1972, the park allowed the fields and scrub to mature into dense woods. A narrow beach strewn with concrete and asphalt debris (rip-rap) exists along Mill Basin.

Evaluation: Natural systems and features within the North 40 Natural Area have changed from limited and young grass and scrub during the historic period, to dense woods today (see fig. 3.3). These woods, which extend into the adjoining airfield within the historic district, obstruct the open spatial character of the landscape that existed during the historic period.

List of Natural Features

NS-1. Successional Woods (post 1972). See Airfield Character Area.

NS-3. Mill Basin Beach (c.1942).

Spatial Organization

Historic Condition: During the historic period, the North 40 Natural Area (outside of historic district) was open field north of runway 6-24, bordered by a perimeter chain-link fence along Shore Parkway and the open waters of Mill Basin. The open space was interspersed by nine widely spaced buildings and four radio towers at its eastern end, sited outside of the flight-path clear zones for runways 15-33, 1-19, and 6-24.

Post-Historic and Existing Conditions: After 1945, grasses and low scrub became established in the ammunitions-communication area, but the vegetation was kept low overall in order to maintain sight lines from the airfield. In c.1955, the Navy removed the four World War II radio towers and installed eleven new towers. After decommissioning of NAS New York in 1972, the towers were removed and the park allowed the fields and scrub to mature into dense woods. Small cleared areas were maintained around some of the buildings.

Evaluation: The spatial organization of the North 40 Natural Area has changed from completely open with scattered buildings and structures during the historic period, to mostly enclosed today (see fig. 3.3). The existing woods and scrub close off the space except along the patrol road, paths, and some of the buildings. The spatial organization of the development defined by the flight-path clear zones is no longer visible.

Land Use

Historic Condition: During the historic period, the Navy used the remote area north of the airfield as an ammunitions storage area and as the site of high-frequency radio towers for ship-to-shore communication.

Post-Historic and Existing Conditions: After 1945, the Navy continued to use the area for ammunitions storage and radio transmission. After the decommissioning of NAS New York in 1971, these facilities were abandoned and the towers were removed. In c.1980, the park began managing the area as the North 40 Natural Area for hiking and nature observation.

Evaluation: The land use of the North 40 Natural Area has changed from military to natural resource conservation and recreation.

List of Land Use Features

LU-4. North 40 Natural Area (c.1980)

Topography

Historic Condition: After completion of filling operations in 1942, the topography of the North 40 Natural Area was largely level, except where it dropped down to the shoreline. Unlike the Jamaica Bay frontage, there were no bulkheads along Mill Basin.

Post-Historic and Existing Conditions: There are no documented substantial changes to the overall topography, aside from some erosion has occurred along the Mill Basin shoreline.

Evaluation: The topography of the North 40 Natural Area today is overall the same as it was during the historic period, although it is obscured by woods that have grown up since c.1972.

Circulation

Historic Condition: The primary circulation through the North 40 Natural Area during the historic period was an asphalt-paved patrol road constructed in c.1942 that ran from the Aviation Patrol Base on the east to Flatbush Avenue on the west. Nine short spurs extended off the patrol road to access the ammunitions magazines and other buildings in the area.

Post-Historic and Existing Conditions: After c.1972, portions of the patrol were abandoned or incorporated into a network of foottrails that the park built in c. 1980 as part of the North 40 Natural Area. The park removed or covered over most of the asphalt surface of the patrol road to create a grass walking surface. The spurs to the magazines are generally obstructed by dense vegetation.

Evaluation: Circulation in the North 40 Natural Area has changed from a single asphalt road with spurs to buildings, to walking paths on either new alignments or former asphalt road surfaces. While the original alignment of the patrol road is discernable, most of its paved surface is not. The patrol road extends into the historic district. A comprehensive inventory of the patrol road and spurs was not possible due to heavy vegetation.

List of Circulation Features

C-21. Patrol Road (c.1942). See Airfield Character Area.

C-23. North 40 Natural Area Trails (c.1980). See Airfield Character Area.

Buildings and Structures

Historic Condition: The Navy constructed twelve buildings and four 150-foot tall radio transmitter towers in the area north of runway 6-24 between 1942 and 1945 (see fig. 3.4).¹⁸ Eleven of the buildings were used for ammunitions storage (107, 108, 110-115) and one to house equipment related to the radio transmitter towers (118) for ship-to-shore communications. The ammunitions magazines (110-115)

were heavy poured-concrete buildings with steel doors that were partially below grade. The other buildings were concrete or frame with corrugated sheet-metal siding.

Post-Historic and Existing Conditions: In c.1955, the Navy replaced the four radio towers with eleven new towers (180, 181) in the same general area, and added a second radio transmitter building (237). After transfer of NAS New York to the National Park Service in 1972, most of the buildings in the North 40 Natural Area were abandoned. The eleven radio towers, two radio transmitter buildings (118, 237), smoke drum storage building (107) and S.A. pyrotechnics building (108) were demolished at an unknown date after c.1972. The park maintains the former practice bomb shelter building (109) as a storehouse, while the former inert storage building (106) is in a state of ruins. The concrete ammunitions magazines probably remain intact given their heavy construction, but an inventory of existing conditions was not possible due to overgrown conditions that prevented access. (See historic district evaluation for building 117.)

Evaluation: Three of the twelve buildings and the four radio transmitter towers that existed during the historic period no longer stand. Of the remaining buildings, only the practice bomb storage building (109) is maintained, while the inert storage building (106) is in ruins. The character of the high-explosive magazines (110-115) was not assessed for this report due to inaccessibility.

List of Buildings and Structures Features

- 106. Inert Storage (c. 1942)
- 109. Practice Bomb Storage (c. 1942)
- 110. Fuse & Detonator Magazine (c. 1942)
- 111. Fuse & Detonator Magazine (c. 1942)
- 112. High Explosives Magazine (c. 1942)
- 113. High Explosives Magazine (c. 1942)
- 114. High Explosives Magazine (c. 1942)
- 115. High Explosives Magazine (c. 1942)
- 116. Warhead (c. 1942-1945)

Views and Vistas

Historic Condition: The treeless, level character of the area north of the airfield allowed for expansive views in every direction, except toward Shore Parkway where trees in the right-of-way may have screened views. The four 150-foot tall radio towers were prominent features visible from all parts of Floyd Bennett Field (see fig. 3.4).

Post- Historic and Existing Conditions: In c.1955, the four radio towers were replaced by eleven new ones. Since c.1972, these towers were removed and the

open fields or low scrub grew into dense woods that blocked views into and out from the North 40 Natural Area.

Evaluation: The views that existed historically within the North 40 Natural Area no longer exist, nor do the radio towers that were visible from all parts of Floyd Bennett Field.

Small-Scale Features

Historic Condition: Aside from the chain-link perimeter fence along Shore Parkway, there is no documentation of small-scale features within the area north of runway 6-24 during the historic period. There were probably signs, fences, and other small-scale features associated with the ammunitions magazines and radio towers.

Post-Historic and Existing Conditions: After 1972, the park installed some small-scale features within the North 40 Natural Area, including a fence closing off the patrol road near runway 1-19. Signs, trash cans, and wood bollards are located at the trailhead along runway 6-24, but these are within the boundaries of the historic district.

Evaluation: Insufficient documentation is available to determine the historic character of small-scale features within the North 40 Natural Area. There may be historic small-scale features within the area, but it was not possible to determine this due to dense vegetation that prevents access.

Archeological Features

There may be above-ground remains from buildings and structures within the former ammunitions-communication area, such as foundations from the radio towers and demolished buildings 106, 1078, and 118, but it was not possible to determine this due to dense vegetation that prevented access.

SOUTH ADMINISTRATIVE AREA

The South Administrative Area corresponds to the area south of the airfield/historic district that the Navy redeveloped during World War II from the former site of the Barren Island community. This area encompasses the former main barracks area and west barracks area from Flatbush Avenue east to Jamaica Bay south to a portion of the Rockaway Inlet frontage. Most of this frontage, including a seaplane base the Navy built during World War II, is not evaluated here because it is a separate federal property under the Department of Defense (Marine Corps Reserve Center). Overall, the landscape of the south administrative area does not retain its historic World War II-period character due to loss of buildings and structures, new construction, and growth of woods on formerly open land.



Figure 3.11: Historic (1943, top) and existing (c.2008) aerial photographs of the South Administrative Area showing changes in natural systems, spatial organization, cluster arrangement, vegetation, circulation, and buildings and structures. The numbered buildings in the lower photograph are those that remain from World War II. (Top: Photograph 85512, Still Pictures Unit, National Archives II, annotated by SUNY ESF; bottom: USGS photograph reproduced from Microsoft Live Earth, annotated by SUNY ESF.)

Natural Systems and Features

Historic Condition: During the municipal airport period, the area corresponding to the South Administrative Area corresponded largely to Barren Island, a natural landmass that had undergone considerable changes over the preceding century. Despite this, the island contained natural tidal estuary off Rockaway Inlet and natural sand beach along Jamaica Bay, with patches of woods and dune environments. When the Navy acquired this property in 1942, it cleared the land and filled it to a level surface, building timber and steel bulkheads along the entire



Figure 3.12: Historic (c.1944, top) and existing (2008) views of the eastern side of the main barracks area looking north toward the airfield and Coast Guard Air Station showing changes in spatial character, vegetation, and buildings and structures. The large multi-winged building was the dispensary (87), which was torn down in the late 1960s and is today the site of the park nursery (wooded area with flowering tree at right). The arched-roof building visible at the left side of both photographs is the former Enlisted Men's Recreation Building (74). (Top: Uncatalogued maintenance file photograph, Floyd Bennett Field, Gateway National Recreation Area; bottom: SUNY ESF.)

Jamaica Bay and Rockaway Inlet shorelines. By 1945, there were few natural features left within the area, with the possible exception of some areas where natural grasses had become reestablished.

Post-Historic and Existing Conditions: After 1945, grasses and low scrub became established outside of the main and west barracks areas where the ground was not maintained as mown grass. After 1972, the park allowed natural succession to take its course in portions of the South Administrative Area, leading to the growth of woods between the main and west barracks areas, along Jamaica Bay, and to the north along the airfield. In addition, a natural beach and dune environment has become partially reestablished along the Jamaica Bay and Rockaway Inlet frontage, accelerated in part by the deterioration of the bulkhead.

Evaluation: Natural systems and features within the South Administrative Area, notably deciduous woods, were inconspicuous in the landscape at the end of the historic period in 1945 and have become reestablished in the years since, particularly since 1972 (fig. 3.11) The growth of woods has altered the historically open character of the landscape and obstructed views north to the airfield.

List of Natural Features

- NS-1. Successional Woods (post-1972). See Airfield Character Area.
- NS-2. Jamaica Bay Beach (post-1945). See Airfield Character Area.
- NS-4. Rockaway Inlet Beach (post-1945)

Spatial Organization

Historic Condition: The South Administrative Area was organized into two main spaces during the historic period: the main barracks area and the west barracks area, each defined by loose clusters of buildings within the flight-path clear zones. Within each of these areas was a series of smaller spaces defined by the arrangement of buildings. Two barracks complexes in the northern half of the main barracks area featured central buildings flanked by individual barracks that created formal, symmetrical spaces in the landscape. Some of the large buildings, such as the Bachelor Officers' Quarters (68) and dispensary (87), had multiple wings that created small courtyards. The marginal wharf and adjoining



Figure 3.13: Near-historic (c. 1949, top) and existing (2008) view of World War II-period temporary construction in the main barracks area. The photograph at the top illustrates the dispensary (87), the lower is a similar existing building, barracks 15 (72) showing current vacant condition and later siding. The plantings were added after 1945. (Top: Photograph 20302, Gateway National Recreation Area Museum Collection; bottom: SUNY ESF.)

industrial buildings (power plant, laundry, fuel tanks) formed a space within the main barracks area along Rockaway Inlet oriented around delivery of services and goods. Unlike the main barracks area, the west barracks area had little spatial definition due to its limited number of buildings. Between the main and west barracks area was the seaplane base (parking apron), which was spatially defined within the open landscape only by the limits of its concrete pavement.

Post-Historic and Existing Conditions: After 1945, the symmetrical spatial organization of the two groups of barracks (around building 70, present Ecology Village gym, and building 69, present park administration building) was altered through loss of eight of the thirteen buildings, and loss of the multi-winged buildings (Bachelor Officers' Quarters, 68, and dispensary, 87). New buildings, notably the Gateway Environmental Education Center (272) and new dispensary (275) did not reinforce the earlier spatial organization of the landscape. Most importantly, the growth of woods altered the overall

open spatial character of the landscape.

Evaluation: The spatial organization of the South Administrative Area has changed overall from open to enclosed due to the growth of successional woods (figs. 3.12, 3.13). The two primary spaces defined by building clusters—the main barracks area and the west barracks area—are no longer visible as distinct spaces in the landscape. The secondary spaces formed by the arrangement of buildings are also largely gone due to extensive loss of buildings.

Land Use

Historic Condition: During the municipal airport period prior to World War II, the South Administrative Area was used primarily for residential purposes within remnants of the Barren Island community. The last industry, the Products Manufacturing Company at the foot of Flatbush Avenue, closed in c. 1931. In 1936, the city evicted residents from the western two-thirds of the island in preparation for redevelopment of the land into Brooklyn Marine Park. The eastern third of the island, which remained in private ownership, contained approximately twenty-five families until c. 1941, along with a Roman Catholic church. These private residential uses disappeared when the Navy took over the property from the private owners and the city in 1941-1942. The Navy redeveloped the property for use as the support area for NAS New York, which included primarily residential-

related uses (barracks, recreation halls, mess halls, etc.), with service and shipping uses along the marginal wharf and military transportation at a seaplane base along Rockaway Inlet.

Post-Historic and Existing Conditions: After 1945, the Navy moved its administrative offices to the main barracks area and allowed the west barracks area to be used by the state for public housing. The Navy granted the seaplane base along Rockaway Inlet in 1952 to the Department of Defense for use as an Armed Forces Reserve Center. In c.1968, the city Board of Education operated a public school in a new building (278) constructed within the main barracks area. Most changes in land use came after transfer of the property to the National Park Service in 1972. The Armed Forces Reserve Center remained the only part of the South Administrative Area that continued in military use. The park did not have enough need for most of the buildings and many stood vacant. Several remained in use by either the park or one of its partners, including building 69 for park administrative offices, 272 for public education, 129-132 for a federal Job Corps program, and 275 for park police headquarters. Parts of the South Administrative Area were redesigned for recreational uses, including an archery range, nursery, youth environmental programs, fishing access, remote-controlled car track, and ballfields.

Evaluation: Land uses within the South Administrative Area have changed from primarily military-residential during the historic period to a mix of administrative, educational, and recreational uses today. Portions of the South Administrative Area are not in use, with vacant buildings and overgrown grounds.

List of Land Use Features

LU-5. Archery Range (c.1980)

LU-6. Friends of Gateway Nursery (c.1980)

LU-7. Polytechnic University Ballfields (c.2000)

Cluster Arrangement

Historic Condition: During the municipal airport period, there were initially two clusters of development on Barren Island, one at the eastern end of the island and the other at the western off the foot of Flatbush Avenue. This western cluster was demolished when the city evicted the residents in 1936 as part of the planned development of Brooklyn Marine Park. The Navy cleared the remnants of the eastern cluster in 1942 when it began building the main and west barracks areas. These two areas formed distinct clusters of development defined by the flight-path clear zones for runways 1-19, 12-30, and 15-33. The main barracks area formed a triangular cluster with approximately twenty-seven buildings, while the west barracks area was a narrow linear cluster consisting of just two buildings

and the field's sewage and garbage plant. The two clusters of development were surrounded by open field without any woods or other development.

Post-Historic and Existing Conditions: After 1945, the two clusters began to erode due to loss of buildings. In the west barracks area, the conversion of runway 15-33 to a taxiway allowed development of public housing in the late 1940s to extend beyond the narrow limits of the original flight-path clear zone. After the Navy transferred ownership of the field to the National Park Service, the distinction of the clusters became further blurred due to additional building demolition and growth of woods on formerly open field that obscured the limits of the World War II-period development.

Evaluation: The World War II-period cluster arrangement is no longer visible in the landscape. The west barracks area has largely disappeared, with only the sewage tank remaining from World War II. While post-1945 development within the main barracks area has not extended beyond the historic flight-path clear zones, the loss of all but eleven of the twenty-seven buildings and growth of woods has blurred the historic limits of the cluster.

Topography

Historic Condition: During the municipal airport period, Barren Island consisted of a combination of natural and built land. In the World War II-period redevelopment, the Navy transformed the topography into an entirely constructed character. The shoreline along Jamaica Bay and Rockaway Inlet was moved east and south upwards of 800 feet, requiring filling and construction of bulkheads. The remainder of the island was graded to a level surface.

Post-Historic and Existing Conditions: The topography of the South Administrative Area remained largely unchanged until after its transfer to the National Park Service in 1972. The most notable changes occurred along the shoreline, where fill eroded due to failure of the bulkheads and marginal wharf. Minor topographic changes occurred in c.1996, when the park constructed earthen berms to close-off and edge the road to Hangar Road (Aviation Road), and the taxiway 7 intersection with the main road (Floyd Bennett Boulevard).

Evaluation: The topography of the South Administrative Area retains its overall level character as built during World War II, but has eroded along the shoreline (see fig. 3.11). The park's addition of berms along some of the roads and taxiways has altered the topography, but more noticeably the circulation patterns in the landscape.

List of Topography Features

T-1. Berms (c.1996)

Vegetation

Historic Condition: During the municipal airport period, there were a variety of trees and shrubs within the remnants of the Barren Island community, along with natural upland and estuarine plant communities. During the World War II redevelopment, the Navy removed all vegetation and reestablished mown grasses in the developed areas. Based on available documentation, it appears the Navy did not plant any trees or shrubs within the South Administrative Area during World War II.

Post-Historic and Existing Conditions: After 1945, the Navy planted foundation shrubs around the buildings in the main barracks area, but kept the landscape devoid of trees with very few exceptions probably to maintain sight lines and flight-path clear zones. After transfer to the National Park Service in 1972, the park planted thousands of trees, mostly sycamores and pines around the buildings and along the roads, and masses of Japanese black pine in the open areas between the main and west barracks areas, many of which are dying. The park also planted a variety of trees and shrubs within a nursery established at the site of the dispensary (87), and as foundation plantings around the park headquarters building (69). Portions of formerly mown turf are not maintained and are in varying states of natural succession, from scrub to dense woods (see Natural Systems and Features characteristic).

Evaluation: With the exception of lawn, the existing vegetation in the South Administrative Area was planted after 1945, and the vast majority by the park after 1972. The trees, especially those planted in masses, detract from the historic open spatial character of the landscape, block historic circulation patterns, and obstruct views of the airfield.

List of Vegetation Features

- V-8. Main Barracks Area Lawn (c.1942+)
- V-9. Foundation Plantings (post-1945)
- V-10. Specimen Trees (post-1972)
- V-11. Planted Woods and Japanese Black Pine (post-1972)

Circulation

Historic Condition: During the municipal airport period, circulation within the South Administrative Area was limited to a few roads remaining from the Barren Island community, notably Main Street that ran east-west from Flatbush Avenue to Jamaica Bay, with two cross streets, Bay Street and White Street. The Navy removed these three streets in its World War II-period expansion of Floyd Bennett Field and laid out a new system of vehicular roads, which the Navy apparently did not name. The system, which was separate from the taxiways, included a new entrance from Flatbush Avenue at the south end of Hangar Row

(within historic district), which led to a road that paralleled Flatbush Avenue (present Aviation Road) to the west barracks area. Aviation Road intersected the road to the main barracks area (present Floyd Bennett Boulevard) that continued north to the Coast Guard Air Station and Aviation Patrol Base. Off this main road, the Navy built a number of side roads. All were paved in asphalt and most apparently did not have concrete curbs. Parking was generally accommodated by single-stack areas within widened roads. In addition to roads, the Navy also built an extensive network of concrete sidewalks throughout the main and west barracks areas. These included walks paralleling the main roads and walks leading up to each building. In addition to vehicular and pedestrian circulation, the South Administrative Area also included aviation circulation along taxiway 7, which ran north-south between the main and west barracks area within the flight-path clear zone for runway 15-33. This taxiway provided access to the seaplane base/seaplane parking area along Rockaway Inlet that was built in c.1942. The Navy may not have completed paving of the northern part of taxiway 7 until after 1945.

Post-Historic and Existing Conditions: In c.1948, Aviation Road was extended south to access state veterans' housing, and around the same time, the Navy built a parking lot on the site of barracks (63) adjoining building 69 where it had relocated its administrative offices. During the Korean War improvements of the early 1950s, the Navy made a number of changes to the circulation in the South Administrative Area. In c.1951, the Navy built a new entrance off Flatbush Avenue that was an extension of the main road through the main barracks area (present Floyd Bennett Boulevard). This new entrance, which was built to circumvent the extension of runway 1-19, featured a planted median and a gatehouse (135) and sentry booth (207) at the intersection with Aviation Road. At the same time, the northern part of Aviation Road where it crossed the extension of runway 1-19 was realigned and parts of the sidewalk removed. Also as part of the new entrance, the Navy built a parking lot off the southeast corner of the intersection of Floyd Bennett Boulevard and Aviation Road adjacent to the west barracks area. Within the main barracks area, a new parking lot and sidewalks were added as part of the construction of the new brick barracks complex (129-131). In c.1965, Aviation Road was extended south and east as a cul-de-sac for development of mobile home courts, and a similar drive was added near the Navy headquarters building (69) for a second set of mobile home courts built in c.1970. Consisting of asphalt pads on which mobile homes were parked, these may have been used by Navy reservists for their weekend tours of duty.

A number of additional circulation changes were made to the South Administrative Area after transfer of Floyd Bennett Field to the National Park Service in 1972, including the addition of several small parking lots and changes to sidewalks and building approaches due to demolition and new construction. Deterioration of the marginal wharf bulkhead led to collapse of the roadbed along the wharf. The Department of Defense built a new entrance road, later named Cei

Angelo Nania Way, to its reserve facility on the former seaplane base in c.1975. Most of the post-Navy circulation changes came in c.1996 when the park built a new public entrance road to Hangar Row on runway 15-33 (taxiway 10), which began on taxiway 7. As part of this project, the northern intersection of Aviation Road with Floyd Bennett Boulevard was removed and replaced by an earthen berm to prevent access to the remaining abandoned roadbed to the north that led to Hangar Row. At the same time, the Korean War-era parking lot was replaced by a new parking lot that realigned the intersection of Aviation Road to the east of the gatehouse. A berm was also added to close off the section of taxiway 7 south of Floyd Bennett Boulevard, and a remote-controlled race track was built on a part of the abandoned taxiway.

Evaluation: Much of the World War II-period circulation system, including roads, sidewalks, and a taxiway, remain in the south support area. The changes made after the war were largely limited to minor additions to the system. The alterations made by the park in c.1996, however, altered the character of the road and taxiway system by obscuring the historic circulation. The park also removed a portion of Aviation Road, which was one of the primary roads during World War II leading from the main entrance off Flatbush Avenue.

List of Circulation Features

- C-4. Aviation Road (1942, c.1951, c.1996). See Hangar Row Character Area.
- C-31. Taxiway 7 (c.1942)
- C-32. Floyd Bennett Boulevard/current park entrance (c.1942, c.1951)
- C-33. Ranger Road (c.1942)
- C-34. Enterprise Avenue (c.1942)
- C-35. Independence Lane (c.1942)
- C-36. Cei Angelo Nania Way (c.1975)
- C-37. Sidewalks (c.1942)
- C-38. Parking Lots (post-1945)
- C-39. West Barracks Area Mobile Home Courts (c.1965)
- C-40. Main Barracks Area Mobile Home Courts (c.1970)
- C-41. Main Visitor Parking Lot (c.1996)

Buildings and Structures

Historic Condition: During the municipal airport period, there were a variety of buildings and structures on Barren Island, including houses, churches, a school, factories, and wharfs. Most of these buildings and structures were demolished between 1931 and 1936 as the city made plans to redevelop the island into Brooklyn Marine Park. By 1941, there were approximately twenty houses and a church remaining on the eastern end of the island that remained in private ownership. These buildings were demolished by the Navy in 1941-42 in the war-

time expansion of Floyd Bennett Field that established the main and west barracks area on Barren Island. Most of the new buildings were designed according to the Navy's standards for temporary construction, intended for removal after the war. These buildings, including the barracks, mess halls, recreation buildings, a dispensary, and single-family houses used as married officer's quarters, were built of frame construction with low hipped roofs, clapboard siding, and double-hung windows with horizontal window muntins. Some of these buildings, such as the Bachelor Officers' Quarters (68) and main mess hall (67) were two stories and had multiple wings. Two of the barracks complexes featured a central mess or recreation building symmetrically flanked by rows of barracks that were linked by concrete-block breezeways. The most unusual of the frame buildings within the main barracks area was the Officers' Mess Hall (73), which featured an elaborate interior decorated by famed interior designer Dorothy Draper, with art deco elements recovered from the ocean liner, the S.S. Normandie, which sank in 1941.

The second type of building in the main and west barracks areas was designed according to the Navy's standards for permanent construction using masonry and steel. These include Power Plant A (86) and a laundry (85) built of red brick, and small utility buildings (58, 59, 88, 101, 102) built of brick or concrete. The power plant was a duplicate of Power Plant B in the Naval Aviation Patrol Base maintenance area. In addition to buildings, the Navy also erected a variety of structures, including steel aviation gas storage tanks (187, 188), concrete water tanks (179, 180), a concrete sewage treatment tank (60), steel bulkhead along the shoreline, a marginal wharf, and a seaplane ramp along Rockaway Inlet (currently Department of Defense property). In total, during the war the Navy erected approximately thirty-four buildings and structures within the main barracks area, and seven buildings and structures within the west barracks area.

Post-Historic and Existing Conditions: In c.1948, the Navy removed eight of the frame barracks from the main barracks area. These may have been relocated to the west barracks area for use by New York State as veterans' housing. These housing units, together with the two World War II barracks (80, 81) within the west barracks area, were removed by c.1960 except for one (267). In c.1952 as part of the Korean War-era improvements, the Navy constructed a new brick-faced barracks complex (129-132) within the main barracks area. Other major changes to buildings and structures during the Navy's tenure included construction of a new garage in c.1958, three ranch-style houses (268-270) as Married Officer Quarters in c.1960, and a three-story school building (272) in 1968; demolition of the dispensary (87) and construction of a new dispensary (275) in c.1968; and loss of the main mess hall building (67) due to fire in the winter of 1968-1969.

Major changes to buildings and structures following transfer of the field to the National Park Service in 1972 included demolition of the Bachelor Officers' Quarters (68) and Officers' Mess Hall (73), and collapse of the marginal wharf due to failure of the steel bulkhead and the swift currents of Rockaway Inlet.

A number of buildings have stood vacant and several have suffered extensive deterioration and/or structural failure. These include two World War II barracks (62, 72), Power Plant A (86), laundry (85), married officers' quarters (156, 157), the Korean War-era barracks complex (129-132), Enlisted Men's Recreation Building (74), water tanks (179, 180), and sewage treatment tank (60). The park has erected several minor buildings in the South Administrative Area, including a shelter for the archery range, a shed and wood-frame greenhouse at the nursery, a pavilion near the Ecology Village gym (70), and two pre-fabricated comfort stations.

Evaluation: Little historic World War II-period character remains in the buildings and structures of the South Administrative Area. The largest World War II-era buildings in the main barracks area, the Bachelor Officers' Quarters (68), dispensary (87), and enlisted men's mess hall (67) no longer stand. Of the thirty-four buildings and structures erected in the main barracks area during World War II, sixteen remain standing (see fig. 3.11). Of these, twelve are vacant and four are in an advanced state of deterioration (plans are underway for demolition of Power Plant A (86) and the laundry (85) which have collapsed roofs). Despite condition issues, the buildings retain their massing and varying amounts of their exterior details, with later siding common on the frame buildings (fig. 3.13). The two World War II-era buildings that are actively used, park headquarters (69) and Ecology Village gym (70), together with the vacant former Job Corps gym (74), have been more extensively altered with new siding and windows. In the west barracks area, the only World War II-era building or structure remaining is the inactive sewage treatment tank, which the park is also planning on demolishing. Approximately twenty buildings and structures post-date 1945. Most are minor buildings except for the Gateway Environmental Education Center (272) and the park police headquarters (275), both built in c.1968. Although not within National Park Service property, the large Department of Defense buildings constructed in 1975 on the former seaplane base are conspicuous in the setting of the South Administrative Area.

List of Buildings and Structures Features

(First name is original designation, followed by current name)

- 60. Sewage Treatment Tank (c.1942)
- 62. Barracks Number 2 (c.1942)
- 69. CPO Barracks No.5, Jamaica Bay Unit Headquarters (c.1942)
- 70. West Recreation Building, Ecology Village Gym (c.1944)
- 72. Marine Barracks Number 15 (c.1942)
- 74. Enlisted Men's Recreation Building, Former Job Corps Gym (c.1942)
- 75. Pump Station A (c.1942)
- 85. Laundry (1942, c.1944)
- 86. Power Plant A (1942)

- 88. South Service Substation (c.1942)
- 101. Fuel Oil Storage Substation 2 (c.1942)
- 102. Water Storage Pump House (c.1942)
- 129. Mess Hall, Former Job Corps Center (c. 1952)
- 130. Barracks, Former Job Corps Center (c. 1952)
- 131. Barracks, Former Job Corps Center (c. 1952)
- 132. Heating Plant, Former Job Corps Center (c. 1952)
- 135. Gate House (c. 1951)
- 142. Marginal Wharf (c.1942)
- 154. Pump House (c. 1952)
- 157. Married Officer Quarters A (c.1942)
- 158. Married Officer Quarters B (c.1942)
- 179. Water Storage Tank (c.1942)
- 180. Water Storage Tank (c.1942)
- 207. Main Entrance Sentry Booth (1960)
- 250. Handball courts (c.1942)
- 258. Garage & Crash Fire Station, Park Maintenance Shop (c. 1958)
- 267. Relocated barracks, housing (c.1942, 1960)
- 268. Married Officer Quarters C, park staff housing (c.1960)
- 269. Married Officer Quarters D, park staff housing (c.1960)
- 270. Married Officer Quarters E, park staff housing (c.1960)
- 272. School, Gateway Environmental Education Center (c.1968)
- 275. New Dispensary, Park Police Headquarters (c. 1968)
- 403. Jamaica Bay Bulkhead (c.1942). See Airfield Character Area.
- 408. Archery Range Shelter (c.1980)
- 409. Nursery Comfort Station (c.2006)
- 410. Nursery Shed (c.1980)
- 411. Nursery Greenhouse (c.1980)
- 412. Ecology Village Comfort Station (2006)
- 413. Visitor Parking Area Comfort Station (2006)
- 414. Sewage Plant Buildings (post-1945)

Views and Vistas

Historic Condition: The South Administrative Area was characterized by broad views during World War II made possible by the level topography, lack of trees, and broad expanses of the airfield and adjoining water. Buildings and structures within the area do not appear to have been designed to capture specific views, but the Navy probably considered visual connection to the airfield important for the operation of the air station. Taxiway 7, leading to the seaplane parking apron along Rockaway Inlet, was designed with a clear sight line.

Post-Historic and Existing Conditions: In the years after transfer of the field to the National Park Service in 1972, the growth of planted and successional woods

and trees blocked many of the broad views out from the South Administrative Area. There is no visual connection from the South Administrative Area to the airfield. The sight line along taxiway 7 was obstructed with the addition of a berm along Floyd Bennett Boulevard in c.1996.

Evaluation: The broad views that characterized the South Administrative Area during the World War II period have been lost due to growth of planted and successional woods (see fig. 3.11, 3.12). The sight line along taxiway 7 has also been lost.

Small-Scale Features

Historic Condition: During World War II, the Navy probably installed a variety of small-scale features within the South Administrative Area, including utility components such as manhole covers and vent pipes, iron bollards along the marginal wharf, and a perimeter chain-link fence along Flatbush Avenue. There were no street lights and electrical utilities were located underground.

Post-Historic and Existing Conditions: After 1945, the Navy added small-scale features, notably a steel flagstaff with a yard arm at the entrance to the headquarters building (69) in c.1946, and a sign at the new entrance built in c.1951 that read “U.S. Naval Air Station New York, Naval and Marine Air Reserve Squadrons and Units Attached.” Steel streetlights were probably installed along the main roads outside of the flight-path clear zones around the same time, as well as street signs. After transfer of the field to the National Park Service in 1972, the park added a variety of small-scale features, many for recreational purposes. These included directional signs, picnic tables, garbage cans, benches, additional streetlights, cyclone fences, archery targets, and various other play equipment. A chain-link fence separates the areas managed by the park and the Department of Defense. This fence does not follow the property boundary.

Evaluation: No known small-scale features remain in the South Administrative Area from the World War II period with the exception of the perimeter fence along Flatbush Avenue, and utility components such as manhole covers. There were apparently few small-scale features within the landscape during World War II. The post-1945 small-scale features in the South Administrative Area were not inventoried for this project with the exception of the perimeter fence and headquarters building flagstaff.

List of Small-Scale Features

- SSF-1. Perimeter Fence (1941, 1942, c.2004). See Hangar Row character area.
- SSF-11. Headquarters Building Flagstaff (147, c.1946)

Archeological Features

In addition to the above-ground features listed below, there are traces of removed buildings visible in the ground surface in the main barracks area, some with remnant concrete approach walks.

A-8. Enlisted Men's Mess Hall Foundation (67, built c.1942, burned winter of 1968-69)

A-9. AVGAS Storage Tank Foundations (187, 188, built c.1942, removed post-1972)

ENDNOTES

1. National Park Service, "National Register Information System Database," *National Register of Historic Places*, <http://www.cr.nps.gov/nr/research/nris.htm>; Richard Greenwood and Ricardo Terres, "National Register of Historic Places Inventory Nomination Form, Floyd Bennett Field Historic District" (National Park Service North Atlantic Region, drafted 30 June 1976, revised April 1978).

2 National Register Nomination Form, Floyd Bennett Field, Section 8, 1.

3 Criterion 1 relates to National Register Criterion A, while Criterion 5 does not have a direct relation to the National Register Criteria; Criterion 5 states the property is "composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way or life or culture."

4 John W. Roberts, Acting Chief, National Register of Historic Places and National Historic Landmarks Program, to William Nelligan, Cultural Resources Management Specialist, Gateway National Recreation Area, August 2005 [day not indicated on letter].

5 Roberts to Nelligan.

6 Roberts to Nelligan; Bob Page, Director, NPS Olmsted Center, communication with author, 17 November 2008.

7 Except where noted, sources of information are cited in the site history chapter.

8 This area of significance is indicated on the existing National Register form, but is not supported in the statement of significance.

9 Eusebio Garcia Palacios, "National Register of Historic Places Registration Form, Rockwell Field Historic District" (National Park Service, Unpublished document, 1990), Section 8, 4.

10 M. L. Shettle, Jr. *United States Naval Air Stations of World War II, Volume I: Eastern States*, (Bowersville, Georgia: Schaertel Publishing Co., 1995), 7.

11 These recommendations reflect the findings of the Cultural Landscape Inventory for Floyd Bennett Field (2008), although the district boundaries are slightly different with respect to the flight path clear-zones.

12 In the event that the recommendations to amend the existing National Register documentation are carried out, the existing historic district should still be revised to include the southeastern portion of runway 12-30, which falls within the original airport's boundaries.

13 National Park Service, *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*, 44.

14 Robert Page, Cathy Gilbert, and Susan Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, (Washington D.C.: U.S. Department of the Interior, National Park Service, Cultural Resource and Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998).

15 National Park Service, "Electrical Primary Distribution Site Plan Design Alternatives Floyd Bennett Field" (Drawing 646, December 1985).

16 Mangi Environmental Group and Lone Tree Archeology and Environmental, Inc., "Jamaica Bay Unit Archaeological Overview and Assessment" (Draft report prepared for the National Park Service, September 2005).

17 National Register Nomination Form, Floyd Bennett Field, Section 8, 2.

18 Several other buildings existed north of runway 6-24 during the historic period, including a pistol range that featured a range house (105) and five shooting houses, and a direction finder station (119). The sites of these buildings are within the historic district because they were within the flight-path clear zones.

Drawing 3.1

Cultural Landscape Report for Floyd Bennett Field

Gateway National Recreation Area
Brooklyn, New York

Analysis and Evaluation



National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:
Department of Landscape Architecture
SUNY College of Environmental
Science and Forestry

SOURCES

1. CLR Drawings 1.3, 2.1
2. Field survey, 2006-2008

DRAWN BY

John Auwaerter and Sarah K. Cody
Illustrator CS3, 2008

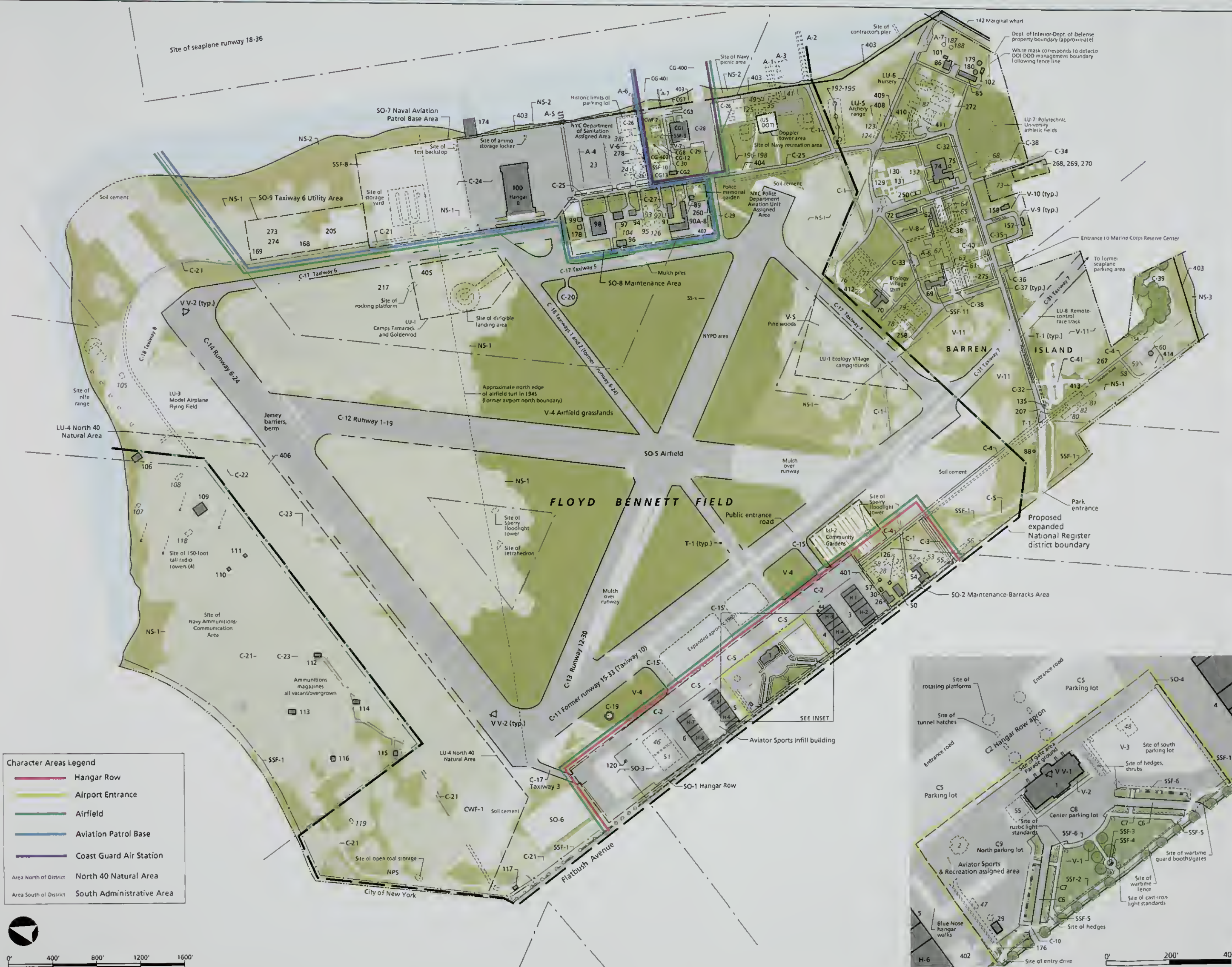
LEGEND

- Features added since 1945 (white mask)
- Features removed since 1945
- 1945 flight-path clearance line
- Property boundary
- Building/structure, inventory number
- Paved circulation
- Unpaved circulation
- Piles
- Fence, light
- Woods, specimen tree
- Berm, mulched pavement
- Lawn or managed grassland
- Upland, low scrub
- Marsh
- Open water

NOTES

1. Plan evaluates existing conditions with 1945 conditions at end of World War II (proposed revised period of signif.).
2. All features shown in approximate scale and location.
2. Feature evaluation not comprehensive outside of historic district.
4. Plan does not show minor park structures (sheds, shelters, tent platforms, etc.), furniture (benches, picnic tables), and other elements.
5. Landscape outside of project area (masked) not evaluated.

Drawing 3.1



IV. PRELIMINARY TREATMENT RECOMMENDATIONS

The landscape of Floyd Bennett Field has witnessed many changes since its development as New York City's first municipal airport between 1928 and 1941, and its expansion into Naval Air Station New York during World War II. Among airports where change is a constant due to shifts in technology, increasing traffic volumes, and commercial pressures, Floyd Bennett Field remains a rare surviving example of a first generation municipal airport. The landscape today also illustrates its redevelopment as Naval Air Station (NAS) New York, which served as a key facility in the World War II home front. While the changes made by the Navy were extensive, they did not remove most of the original municipal airport infrastructure. The World War II naval landscape remains largely intact thanks also due to its relatively brief history as a major naval facility. Except for improvements during the Korean War, the field largely served as a secondary reserve base that required relatively few changes to the airfield prior to decommissioning in 1971.

Since its acquisition of Floyd Bennett Field in 1972, the National Park Service has worked to fulfill its recreation and natural-resource conservation objectives in a relatively inhospitable environment of concrete, asphalt, barren fields, and enormous buildings. These challenges have led to changes in the landscape, including deterioration and removal of buildings, obstruction of runways and taxiways, construction of public amenities, and conversion of open field to woods. The recent rehabilitation of Hangar Row into a sports facility is the most recent of many changes to the field's numerous buildings, aircraft circulation features, and vast open spaces.

Despite its conversion to a recreational park more than three decades ago, the landscape still conveys its aviation origins, although partly obscured. The park has long recognized the significance of Floyd Bennett Field's history as a municipal airport, and focused its initial preservation efforts as directed in the park's 1980 Development Concept Plan on the major municipal airport buildings—the Administration Building and its flanking hangars lining Flatbush Avenue. In response, features added after 1941, many built during World War II, were removed from Hangar Row. Over the past decade, however, the park has also begun to recognize the significance of the field's later resources that reflect its important role in the World War II home front. During this same time, the National Park Service has broadened its preservation efforts to include cultural landscapes. These shifts, together with the comprehensive history documented in this report, should help to forge a new management approach for Floyd Bennett Field that provides a more comprehensive approach to preservation of its unique cultural landscape in the context of current park operations. This approach will be

defined in a new General Management Plan presently being developed for all of Gateway National Recreation Area.

Once the new General Management Plan is completed, a cultural landscape treatment plan (Cultural Landscape Report Part II: Treatment) should be developed to implement the prescribed management direction for Floyd Bennett Field. In the interim, however, the research for this report has revealed a number of treatment issues and tasks that would enhance the historic character of the landscape. The report has also identified additional research needed to fully inform treatment of the landscape.

The following landscape treatment recommendations, based on the findings of the Site History, Existing Conditions, and Analysis & Evaluation chapters, provide preliminary guidance prior to completion of the new General Management Plan and Cultural Landscape Report Part II: Treatment. These recommendations pertain to the landscape within the proposed expanded boundaries of the Floyd Bennett Field Historic District encompassing the airfield, Hangar Row, the Aviation Patrol Base, and the Coast Guard Air Station. The recommendations address an overall treatment approach and general treatment issues that affect the historic character of the landscape. These issues also address planned construction projects, notably the replacement of approximately eight miles of primary electrical cables that provide power to the field's main buildings (PMIS 77297), and proposed construction of two new Flatbush Avenue entrances based on a park transportation study completed in March 2006. These recommendations will require further development in the Cultural Landscape Report Part II: Treatment.

Treatment of the Floyd Bennett Field cultural landscape is presently addressed in three main documents: *General Management Plan* (1979), *Development Concept Plan* (1980, revised 1983), and *Facility and Recreation Use Plan* (1993). The *General Management Plan* gives a broad outline of a plan to fully redevelop Floyd Bennett Field. The plan emphasizes creating a balance between natural and cultural resources by dividing the site into different management zones. The *Development Concept Plan* identifies three main areas of focus for the Floyd Bennett Field landscape: conservation of natural resources, interpretation of cultural resources, and integrating existing institutions in New York City into new uses on the site. The *Facility and Recreation Use Plan* also addresses the need to establish programs to preserve the natural and cultural resources, but emphasizes the need for recreational opportunities. None of the existing documents provides direct guidance on the stewardship of the landscape as a cultural resource. The National Park Service produced these documents at a time when cultural landscape preservation was first emerging. While these planning documents provide a good

foundation, they were written at a time when the theories and practices of cultural landscape preservation were just being developed. The opportunity now exists to reassess the outlined objectives and suggest treatment alternatives that preserve and enhance the historic character of the landscape as the park continues to work toward adapting Floyd Bennett Field to new uses.

More recently, the private Van Alen Institute sponsored a public design competition, “Envisioning Gateway” that called for redesigning Floyd Bennett Field.¹ The competition produced a number of design proposals that call for major interventions and changes. While future management documents such as the General Management Plan or Cultural Landscape Report Part II: Treatment, may consider design proposals generated by this completion, it should be recognized that the entrants were not provided with comprehensive documentation on the history and significance of the cultural landscape.

TREATMENT APPROACH

Based on the recommendations in the Analysis & Evaluation chapter, treatment of the landscape should aim to maintain and enhance the character of the Floyd Bennett Field historic district as it evolved through the end of World War II in 1945, in keeping with the proposed expanded period of significance (1928-1945) and expanded boundaries. This treatment period represents a shift from current management that focuses on the municipal airport period that ended in 1941. The 1945 date will allow for interpretation of both the municipal airport and World War II periods because the Navy improvements were largely additive, leaving much of the municipal airport landscape intact. Treatment should support interpretation of the layered character of the landscape, conveying the story of its initial development as New York City’s first municipal airport and site of record-breaking flights, and its subsequent redevelopment into NAS New York and important role in the World War II home front. As part of this treatment approach, it is not necessary to remove post-1945 resources from the landscape, especially those related to continued military use through 1971. Later military features can provide insight into the field’s use during the Cold War while also providing a tangible connection between past and present—the history of what has happened since 1945.

Due to the extensive alterations undertaken by the Navy during World War II, it would be difficult to manage the landscape for its municipal airport character, except in one area. It would be appropriate to treat the airport entrance area according to an earlier treatment date of 1941 to focus interpretation on the municipal airport period. While creating two different treatment periods is generally not appropriate, it would work here for several reasons. This entrance

landscape was a distinctive and central part of the municipal airport, but during World War II largely served as a backyard to Administration Building, the reverse of its function prior to 1941. The Navy did not significantly change the entrance during the war with the exception of adding one building (48) and security fencing along Flatbush Avenue, and possibly removing the airport entrance sign.² The entrance area is also relatively contained through its framing by the Administration Building and hangars, a condition that would avoid contradiction with interpretation of the larger landscape to 1945. Retention of the existing reconstructed sign, removal of the fencing, restoration of the original planting plan, and reconstruction of the field house (building 2) would allow the park to continue its work at reestablishing the character of the airport entrance during the municipal airport period, a goal it has been working toward over the past decade.

Current planning documents largely focus preservation efforts at Hangar Row. Future efforts should instead take a comprehensive approach toward enhancing the historic character of the entire historic district, including the maintenance and barracks area at the south end of Hangar Row; the airfield with its runways, taxiways, and open field; the Naval Aviation Patrol Base with its hangar, apron, seaplane ramp, and maintenance buildings; and the Coast Guard Air Station with its original hangar and garage. Treatment should follow the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Given the need to adapt the field to contemporary uses, including recreation, interpretation, and natural resource conservation, the following *Standards for Rehabilitation* would be the most appropriate general treatment for the landscape:

- 1. A property shall be used as it was historically or be given a new use that requires minimal change to its distinctive features, spaces, and spatial relationships.*
- 2. The historic character of a property is to be retained and preserved. The removal of distinctive materials or alterations of features, spaces, and spatial relationships that characterize a property is to be avoided.*
- 3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, shall not be undertaken.*
- 4. Changes to a property that has acquired historic significance in its own right shall be retained and preserved.*

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new shall match the old in design, color, texture and where possible, materials. Replacement of missing features shall be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments that cause damage to historic materials shall not be used.

8. Archeological resources shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken. New additions, exterior alterations, or related new construction shall not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and shall be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and its environs.

9. New additions and adjacent or related new construction shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.³

While returning aviation to Floyd Bennett Field may not be feasible, contemporary uses should follow the aviation constraints that historically shaped the distinctive character of the landscape. These constraints included keeping runways and taxiways free of obstructions, locating buildings and vertical structures outside of flight-path clear zones, maintaining aircraft access to the hangars, keeping sight lines open along the runways and across the airfield, and maintaining panoramic views from the control tower in the Administration Building. New uses should utilize historic features where feasible, rather than require new construction.

While the North 40 Natural Area and South Administrative Area are excluded from the recommended expansion of the Floyd Bennett Field Historic District due to a lack of historic integrity, both areas remain part of its setting. Application of the treatment approach for the historic district would also be appropriate for management of these areas as cultural resources. This approach would also help

preserve historic features that do remain in these areas that may be eligible for National Register listing under areas of significance separate from the cultural landscape.

GENERAL TREATMENT ISSUES AND RECOMMENDED TASKS

The following section outlines key treatment issues that affect the historic character of the expanded Floyd Bennett Field Historic District landscape. These issues generally apply to all of the character areas within the district. Each of the issues includes a bulleted list of related tasks that should be considered in development of the new General Management Plan and Cultural Landscape Report Part II: Treatment and in management of the landscape in the interim. Refer to Drawing 3.1 (Analysis and Evaluation plan) for location of features discussed in the text.

PROPOSED ELECTRICAL SERVICE REPLACEMENT

The project to replace the nearly eight miles of underground electrical cables at Floyd Bennett Field (PMIS 77297) is presently in the planning stages and a final design has not been selected as of 2008. In-kind replacement of the existing cables and related infrastructure would be the most appropriate approach in terms of the landscape. During the historic period, all electrical lines and other utilities were underground. There were no overhead electrical lines at Floyd Bennett Field or even street lights, apparently to reduce obstructions to aircraft.

- Avoid use of overhead utility lines, especially within historic flight-path clear zones.
- Avoid construction of new above-ground facilities, such as electrical vaults. If necessary, new vaults should be compatible in design and location to the historic vaults (such as buildings 57, 117, 120).
- Avoid addition of electrical equipment on the exterior of historic buildings.

LOSS OF HISTORIC CIRCULATION PATTERNS

A key characteristic of the airfield that has been diminished over the past two decades is the aviation circulation system. Today, it is difficult to understand how planes moved around in the landscape due to covering of runways with mulch and vegetation; construction of vehicular roads and parking lots on runways, taxiways and aprons; and blocking of runways with berms and concrete barriers. The park added many of these features to control drag racing, accommodate visitor parking, and to reestablish natural conditions. Most of the changes were

additive and therefore reversible, but further study will be needed to address alternative solutions to the natural resource and operations problems that the changes were intended to address. The park's recent transportation study, "Jamaica Bay Transportation Studies Development Concept Plan/Environmental Assessment/Assessment of Effect" (National Park Service and Federal Highway Administration, March 2006), should be revisited to incorporate the objective of retaining and enhancing the historic circulation system. Because it was completed before this cultural landscape report, this study lacked documentation on the history and significance of the landscape.

In general, vehicular circulation should be kept to the historic roadway system, with the taxiway system as the secondary vehicular route. Building of new asphalt roads over the runways (as was done in c.1996 with the existing public access road) should be avoided. Parking should use parking areas that existed historically, or be incorporated without obscuring historic paved surfaces. Vertical features that interrupt the historic circulation patterns and original pavement, such as guiderails, light standards, curbs, berms, bleachers, and buildings, should be avoided. Recommended tasks include:

- Remove berms (T-1) and concrete barriers that currently block taxiways and runways. Access may be controlled with less visually obtrusive features, such as narrow guiderails or bollards that would maintain the visual continuity of the circulation.
- Remove mulch/vegetation cover over the runways.
- Remove the public access road on runway 15-33 (taxiway 7/10, C-11). Reestablish Aviation Road (C-4) as the vehicular connection from Hangar Row to the South Administrative Area, as it was historically. The intersection of Aviation Road and Floyd Bennett Boulevard is blocked by a berm.
- Remove or redesign parking lots and access roads on the Hangar Row apron, especially along the east side of the Administration Building that was the site of the municipal airport boarding-gate area and the World War II parade ground. Visitor parking should be accommodated within the three historic lots in the airport entrance area. Parking on the aprons for Aviator Sports would be best accommodated by simple striping of the original concrete surface.
- Relocate New York City Police vehicle storage currently along the southeast half of runway 12-30 to another location, such as the vacant north half of the Aviation Patrol Base apron or outside of the historic district in the South Administrative Area. Remove the chain-link fence that encloses the runway.

PROPOSED NEW FLATBUSH AVENUE ENTRANCES

One of the main alterations to the existing circulation system of Floyd Bennett Field proposed in the “Jamaica Bay Transportation Studies Development Concept Plan” (2006) is the construction of new entrances off Flatbush Avenue. The report identified Alternative D (Multi-Access) as the “NPS Preferred Alternative.” Under this alternative, the park would build two new entrances to Floyd Bennett Field off Flatbush Avenue: one at the north end of Hangar Row approximately 1,500 feet south of the Shore (Belt) Parkway as a dedicated entrance to Aviator Sports & Recreation; and the second at the airport entrance area, aligning with taxiway 1-2 (original runway 6-24) that would intersect Flatbush Avenue just south of the existing south diagonal entrance drive. The new road through the entrance area would consist of a two-lane twenty-six foot wide roadway extending across the former south parking area (now lawn) and Hangar Row apron. According to the report, this entrance would “...create a grand, park-like entrance adjacent to the gated, historic entrance loop in front of the Ryan Visitor Center.”⁴ The existing park entrance (Floyd Bennett Boulevard) would also be retained under this preferred alternative.

Overall, the most historically appropriate location for new entrances off Flatbush Avenue would be historic entrances, including the diagonal entrance drives (C-6), the World War II entrance drive (C-3) or airport south boundary road (C-1) south of Hangar Row, or the Patrol Road (C-21) north of Hangar Row. There were also secondary entrances within the airport entrance area and north of Hangar Row (see Drawing 1.2, Municipal Airport Period) that may be appropriate for introducing new vehicular entrances.

The general location of the dedicated Aviator Sports & Recreation entrance is compatible with the historic character of the landscape because it could tie into the existing Patrol Road (C-21) and avoid impacts to the Hangar Row apron (C-2). The proposed visitor center entrance, however, would significantly detract from the historic character of the landscape in a number of ways. It would disrupt the symmetry of the airport entrance landscape, alter the historic isolation of the airport entrance area from the adjoining airfield, preclude possible restoration of the south parking lot (now lawn), further break up the circulation patterns of the Hangar Row apron (former passenger boarding area and Navy parade ground), and confuse the historic distinction between vehicular and aircraft circulation through extension of taxiway 1-2 (original runway 6-24).

Reestablishment of vehicular circulation off Flatbush Avenue into the airport entrance area has, however, the potential to enhance the historic character of the landscape by returning activity to the now-closed entrance. Alternatives to the proposed new visitor entrance drive should be explored to avoid altering

the historic design of this landscape (see also preceding recommendations under “Loss of Historic Circulation System). These may include (in order of appropriateness):

- Reopening of the diagonal entrance drives, with the short drives to the north and south of the Administration Building providing access to the Hangar Row apron. This option should be explored as part of an overall plan to reestablish the historic circulation patterns within the airport entrance area, including the north and south parking lots (C-9).
- Reopening of the World War II entrance drive (C-3) or airport south boundary road (C-1) at the south end of Hangar Row, which could tie into a reopened Aviation Road (C-4) to provide access to the visitor center.
- Use of the proposed north entrance (Aviator Sports) as the public entrance to the visitor center.

BALANCING NATURAL AND CULTURAL RESOURCE VALUES

One of the most visible changes to the Floyd Bennett Field landscape is the woods that have grown up on formerly open field, mostly through natural succession. Successional woods have altered the historic open spatial character of the airfield and its critical sight lines. The woods have also lent the landscape a poorly maintained and overgrown character, especially where woods are encroaching on roads, buildings, and taxiways. Another change has occurred through the natural maritime systems of Jamaica Bay, Mill Basin, and Rockaway Inlet that have slowly eroded the bulkheads and landfill of the field. Finding a balance between cultural and natural resources will require thoughtful consideration by park planners given the field’s extensive acreage, limited budget, and location in a sensitive ecosystem. Recommended tasks include:

- Remove or reduce the successional woods in the airfield, at a minimum from the flight-path clear zones. A possible solution may be to replace the woods by enlarging the managed grasslands that presently exist. While not the mown turf that existed historically on most of the airfield, the natural grasslands maintain the open character of the airfield and its historic sight lines while also providing rich wildlife habitat and minimizing maintenance (mowing). In some ways, the grasslands better approximate the native tidal estuary habitat that existed prior to the airfield than do the successional woods.
- Provide a sense of the mown character of the airfield by establishing mowing strips, perhaps ten to twenty feet wide, along the runways and

taxiways. This limited mowing would also help to return the historically well-maintained character to the airfield.

- Replace timber and steel bulkheads in-kind in order to maintain the historic limits of the filled landmass. Reinforcing the bulkheads with stone rip-rap preserves the landmass and adjoining features, such as the Naval Aviation Patrol Base apron in the short term, but over time will allow continued erosion of the landfill as the bulkheads deteriorate.
- Remove or replace the pine woods at the Ecology Village campgrounds, which were planted in c.1974 and are now declining. Although the pines are mostly outside of the flight-path clear zone, they are incompatible with the historic open character of the airfield and block sightlines along taxiway 4 and views from the control tower. Replacement of the pines with shrubs or small trees would be more appropriate to the historic character of the landscape and provide campers with a sense of the unique character of Floyd Bennett Field. It would also be appropriate to relocate the campgrounds to the North 40 Natural Area along with Camps Tamarack and Goldenrod, or to the wooded area off taxiway 7 in the South Administrative Area.

DETRACTING FEATURES AND NEW CONSTRUCTION

While new features may be necessary given contemporary uses, they should be designed to be compatible with the historic character of the landscape, yet distinguishable from historic features. If the need arises for new buildings and structures, these should be located within the historic building clusters defined by the flight-path clear zones, and outside of historic circulation systems. New construction should also respect the historic spatial organization of the landscape. Footprints of lost historic buildings would be the most appropriate sites for new buildings and structures. The Navy's standards for temporary World War II construction, using clapboard siding, double-hung windows, and low able or hipped roofs, would be an appropriate vocabulary for new construction, such as comfort stations and utility buildings.

As noted in the cultural landscape evaluation, a number of features built by the National Park Service and others since opening of the park detract from the historic character of the landscape.

Recommended tasks include:

- Relocate comfort stations 405 and 406 outside of the clear zones adjacent to runway 6-24 and taxiway 6; move comfort station 401 off the Hangar

Row apron. These locations conflict with historic aircraft circulation patterns.

- Relocate the Doppler radar tower outside of the flight-path clear zone for runway 12-30 (under separate federal ownership). An appropriate location would be the site of the radio towers in the North 40 Natural Area.
- Remove the Aviator Sports chiller building (402) and air-conditioning towers, which block the aircraft doors to Hangar 6 and intrude on the setting of the airport entrance area. A more appropriate location would be to the north of hangars 7-8 near the Aviator Sports fields.
- Remove the Victorian-style water fountains, benches, and Central Park-style light standards (SSF-2, 5) from the airport entrance area. Replace the light standards with reproductions of the historic standards. If it is necessary to install features that did not exist historically such as benches, water fountains, and bike racks, use contemporary designs that either recede in the landscape or that recall early twentieth-century park furniture used in city and state parks in New York.
- Remove the black metal-picket fence (SSF-6) along the outer edges of the diagonal entrance drives that divides the airport entrance space. If the airport entrance is managed according to a 1941 treatment date, no fence should be installed in this area. If a fence is necessary, it would be more appropriate to locate it along Flatbush Avenue where there was a fence during World War II.

LOST HISTORIC LANDSCAPE FEATURES

A number of character-defining features have been lost from the landscape since 1945. While preservation of extant historic features must be a priority, consideration should be given to reestablishing character-defining landscape features if resources permit. Recommended tasks include:

- Reestablish historic plantings in the airport entrance area, including the hedges and shrubs along the entrance drives and foundation plantings around the Administration Building. Remove non-historic deciduous trees that line the entrance drives.
- Reinstall cast-iron light standards at the foot of the central entrance walk in the airport entrance area (these are purportedly in storage). Remove the existing non-historic "Central Park-style" light standards (SSF-2).
- Reconstruct the two rustic wood light standards that were along the east edge of the lawn in the airport entrance area.

- Reconstruct the municipal airport field house (building 2) that stood along the east side of the north parking lot in the airport entrance area. This building was a companion to the Administration Building.
- Restore or reconstruct the four piers and two seaplane ramps along Jamaica Bay, which were distinctive features that reflected the naval and aviation origins of the property.

If there is the need and if resources permit, it would be appropriate to reconstruct character-defining buildings that have been lost, notably Hangar A (23) in the Aviation Patrol Base, the field house (2) adjacent to the Administration Building, and the WAVES barracks (27) in the maintenance-barracks area south of Hangar Row.

ENDNOTES

1 See http://www.vanalen.org/gateway/logistics_prog_req.php.

2 The Navy did alter the former passenger/boarding area on the Hangar Row apron east of the Administration Building by removing the gate and fences that delineated this area. The Navy used the apron for a parade ground.

3 Charles A. Birnbaum and Christine Capella Peters, eds., *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (Washington, D.C.: U.S. Department of the Interior, 1996), 49.

4 National Park Service and U.S. Federal Highway Administration Eastern Federal Lands Highway Division, "Jamaica Bay Transportation Studies Development Concept Plan/Environmental Assessment/Assessment of Effect" (Unpublished report, 24 March 2006), 35-36.

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APPENDICES

APPENDIX A: RESEARCH CONTACTS

City of New York, Municipal Archives, New York

No records found pertaining to Floyd Bennett Field aside from documentation already held by Gateway National Recreation Area. The photograph collection was not researched.

Brooklyn Historical Society, Brooklyn, New York

One holding regarding residential community proposal.
Image Database has several images of Floyd Bennett Field dating primarily from the 1920s and 1930s; approximately nine are aerial photos and the others are a mixture of related images or detail shots.

Brooklyn Public Library, Brooklyn Collection, Brooklyn, New York

Mill Basin Records by Gary Schiller. Records consist primarily of correspondence, clippings, leaflets, photos, and maps concerning local civic improvement efforts in the Mill Basin section of Brooklyn.

Gateway National Recreation Area Archives, Fort Wadsworth, Staten Island, New York

Originals and copies of historical photographs and plans and park planning documents.

Kingsborough Historical Society, Brooklyn, New York

Floyd Bennett Field Photograph Collection, 1929-1955. Includes photos of military airfield in Brooklyn, including WPA murals; buildings; aerial views; celebrities such as General Douglas MacArthur, 1955, Douglas Corrigan, 1938, Howard Hughes, 1938-1939, Will Rogers and Wiley Post, 1932-1935.

National Archives and Records Administration, Archives I, Washington, D.C.

Textual information on the Coast Guard Air Station at Floyd Bennett Field.

National Archives and Records Administration, Archives II, College Park, Maryland (continued)

Originals, copies , and three microfilm rolls of historical documents, photographs, maps, and plans of Floyd Bennett Field, primarily from the Navy and City of New York, dating to late 1920s through 1950.

Naval Historical Center, Washington Navy Yard, Washington D.C.

No materials on Floyd Bennett Field.

Naval Historical Foundation, Washington Navy Yard, Washington D.C.

Brief report documenting history of Floyd Bennett Field.

Navy collection of World War II Administrative Histories includes five titles that may have information pertaining to Floyd Bennett Field; these were not researched for this project.

New York Public Library, New York.

Historical photographs in the online Digital Gallery, <http://digitalgallery.nypl.org/nypldigital/>. Searched for Barren Island, Floyd Bennett Field, Jamaica Bay, and Rockaway Inlet.

APPENDIX B: SELECT GLOSSARY OF AIRPORT & MILITARY TERMS

Apron: An area, typically concrete, where aircraft are parked to be loaded and unloaded, refueled, and boarded by passengers. (The American Heritage Dictionary online, <http://dictionary.reference.com>.)

Commissary: A building specific to a military base that sells food and supplies to the personnel. (Trevor N. Dupuy, Curt Johnson, Grace P. Hayes, Dictionary of Military Terms.)

Compass Rose: a large paved or concrete area, typically circular, used to calibrate aircraft magnetic compass, which often become unaligned during flight. It is a feature unique to airfield. (Agricultural Aviation Update Online, "Compass Rose," <http://www.agairupdate.com>.)

Dirigible: A term coined in 1885 for an aerostatic aircraft, also known as a lighter-than-air aircraft for its lift through hydrogen, helium, or heated air. Zeppelin was a brand name for rigid airships; blimps are non-rigid dirigibles. (The American Heritage Dictionary online, <http://dictionary.reference.com>; Wikipedia <http://en.wikipedia.org/wiki/Airship>.)

Dope Shop: A maintenance shop where water proof varnish, known as dope, is applied to aircraft. (English Heritage Online Thesaurus, <http://thesaurus.english-heritage.org.uk/>.)

Marginal Wharf: A platform, typically built on pilings and projecting into a body of navigable water for the purpose of loading ships, constructed parallel to the shoreline. (The American Heritage Dictionary online, <http://dictionary.reference.com>).

Nose Hangar: a hangar that covers only the front or nose of an aircraft. (Times Standard Online, "New Mission Sought for WWII Hangar," <http://times-standard.com>.)

Synthetic Training Building: A military facility that provides models and simulations designed to support training exercises. (BAE Systems, "Hawk Synthetic Training Facility," <http://www.baesystems.com>.)

Taxiway: An area on which the aircraft can slowly move along the ground, or taxi. The taxiway connects areas, such as hangars, the main passenger terminal, aprons,

and runways. (The American Heritage Dictionary online, <http://dictionary.reference.com>.)

Tetrahedron: Also known as a hedgehog or Element C, a tetrahedron is a training device used to simulate beach conditions. The tetrahedron consists of three steel riveted rails with flattened ends to prevent sinking in the sand. (The Navy Historical Center, "The Invasion of Normandy, D-Day June 6, 1944." <http://www.history.navy.mil/ac/d-day/exdday/exdday6.htm>.)

APPENDIX C: RECOMMENDATIONS FOR FURTHER RESEARCH

This Cultural Landscape Report for Floyd Bennett Field was scoped at a thorough level of research, which provided sufficient documentation on the overall development of the vast landscape but was inadequate to fully explore some details of its history and existing conditions. Documentation from manuscript collections was largely based on prior research for historic structures reports and historic resource study of Jamaica Bay, which did not focus specifically on the landscape. Inventory of existing conditions also proved inadequate due to lack of access at the North 40 Natural Area due to overgrown conditions, and to the Coast Guard Air Station, due to its high security status under assignment to the New York City Police Aviation Unit.

The following is a list of recommendations for further research for the Site History, Existing Conditions, and Analysis and Evaluation chapters (see also Appendix A, Repositories Consulted and Results).

SITE HISTORY

The following documentation would complete the site history of Floyd Bennett Field and enhance interpretation of the landscape. This documentation may also be necessary to inform the Cultural Landscape Report Part II: Treatment, but is not necessary for evaluation of the landscape's historic integrity.

- Documentation of plant species on 1935 planting plan in the airport entrance area compared with implemented plantings.
- Type of fence during municipal airport period around boundary of airport entrance area (east, north, and south sides).
- Existence of airport entrance sign (SSF-4) during World War II.
- Historic photographs or plans of rocking platform and tetrahedron within the airfield.
- Documentation on the World War II-period runway lighting system.
- Documentation on changes to runway, taxiway, apron, and road pavements.
- World War II-period ground-level photographs of the main and west barracks area, and the maintenance-barracks area south of Hangar Row.
- Original planting plan for Coast Guard hangar.
- Post-1937 construction history of Coast Guard Air Station.
- Historic photographs of the ammunitions-communications area.
- Historic photographs of barracks complexes in main barracks area (buildings 70/76-79, 61-67, 69, 72) and west barracks area (80, 81, 82), and Officers' Mess Hall (73) and its Dorothy Draper designed interior.

EXISTING CONDITIONS

- Document small-scale features (navigational and utility remnants) within the airfield remaining from military uses (pre-1971).
- Assess if there are remnants of the rocking platform and tetrahedron within the airfield.
- Document plantings around the Administration Building.
- Assess type of soil cement pavement in runway approaches.
- Check inventory of small-scale features, vegetation, and circulation within the Coast Guard Air Station (New York Police Aviation Unit assigned area).
- Document high-explosive magazines and remnants of the radio towers in the North 40 Natural Area.

ANALYSIS AND EVALUATION

Further research pertinent to the landscape includes the following items. However, this list does not include further research to assess significance in terms of architecture, engineering, archeology, or other areas of significance.

- Undertake research to assess whether Floyd Bennett Field possesses national significance under Criterion A in the area of transportation.
- Evaluate navigational and utility remnants in the airfield (SSF-7).
- Evaluate Coast Guard hangar plantings (V-7).
- Evaluate Coast Guard transformer vault (CG-12).

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